Clinical Medicine

volume 8 / number 8

August
1961

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Teaching in a Rural Hospital

HAROLD B. PLUMMER, M.D., *Preston, Maryland*

►*Few realize the increasing importance of the rural general practitioner and the excellent opportunity he has to raise the standards of the nursing profession in the rural hospital, to maintain good relations between the hospital and the community, and to assist in the postgraduate training of physicians.*◄

Teaching in a rural hospital can be divided into three categories: teaching nurses, teaching resident physicians, and postgraduate instruction for the staff. In our hospital's nurses' training school, it is the duty of all the active staff members to do some teaching. The rural general practitioner, when he comes into the community, should volunteer his services for teaching nurses. This shows his interest in staff privileges, helps to increase his stature with his new associates, and is an ethical form of advertising. Some of us will do well; others who do not should be gradually weeded out.

If the doctor is well qualified, there are many mutual advantages. The doctor takes pride in his work, and is trying constantly to improve it. It enables him to keep abreast of the newer advances, and thus become better able to serve his community. It gives him more than a passing interest in his hospital, and encourages him to improve the status of his workshop. The rural general practitioner needs to press his efforts in his hospital as hospital competition is very great; and until he has manifested his interest, the "old guard" is going to consider him only according to his past record. The plight of the physician in reference to present hospital relations is, in many instances, of his own making. It may be possible for the general practitioner to re-establish the real purpose of the hospital, i.e., to serve the patients, not, as it is considered by many specialists, to serve the specialists.

The doctor's interest and desire to do good work improves the service and the standing of the hospital. It promotes better relations between the staff and

the governing board of the hospital, enabling them to better serve the community.

Hospital Administration

Of course, the administrator, board of governors and staff have separate and distinct purposes; yet, if the hospital is to run efficiently, the efforts of all must be coordinated. Neither is *in*dependent; all are *inter*dependent.

There is a recent recommendation from the American College of Surgeons that every hospital should have one or more members of its active medical staff serve as elected members of the board. Joint conference committees can not solve all problems as well as can intimate, personal contact. This consideration is especially important in light of the ever-increasing number of hospitals which are being run exclusively by the administrator or a combination of the administrator and the board. Doctors on the board will help to bring the hospital back to the patients. The rural general practitioner is the greatest factor in the improvement of relations between all of these units; because he has the most contacts with the general public—his patients.

The cooperation of doctors is the one way doctors can help to improve the nursing profession's standing in the community as a whole, because then we know what is being done for the nursing profession as undergraduates. This leads to a better understanding of each other's problems. In an effort to raise the stature of the degree R.N., many fields are being explored. There are many efforts being made to associate schools of nursing with institutions of higher learning, in order that the graduate nurse may receive a degree comparable to the A.B. or B.S. degree.

Role of the Rural General Practitioner

The rural general practitioner fits well into this picture. We have neglected many opportunities to improve our relations. With an upsurge in the general practitioner's standing, we should make full use of this wonderful opportunity. Except in the highly specialized fields, the general practitioner is the best teacher of nurses. He must bring his knowledge to the level of an undergraduate student, as he is constantly doing with his patients. He is well qualified to teach medical nursing, anatomy, physiology, pharmaceuticals and all other subjects of this nature.

All of us should encourage, through our rural hospitals, the formation of general practice residencies in our nearby medical schools. This is a corollary to the above procedures; the rural hospital should, by all means, be

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a part of this program. The forementioned points lead to the last, that the department of general practice in every rural hospital should gear itself to the training of more and more general rural practitioners.

General Residency Programs

Intern and resident programs in the rural hospital are quite a problem because of the great number of openings in both fields; and unless the medical school uses a good accredited rural hospital for their general residency program, not only will the rural hospital suffer, but also the future doctors of medicine. The reasons for this are many: the wards of large hospitals no longer exist, the outpatient departments are no longer crowded, and both these facts lessen the amount of clinical teaching. The rural or semi-rural hospital is rendering an increasing amount of medical and surgical care, as patients desire to be close to home and more such hospitals are being constructed. The urban district of large cities is shrinking; the suburban and rural areas are becoming more populated. The training of doctors, particularly general practitioners will soon have to include the rural and semi-rural hospital in order for internes to get a rounded background for general practice.

Better Staff Conferences

The postgraduate training for the physician of the staff should consist of good staff meetings with business kept at a minimum, sectional and departmental organization with adequate and expert discussion of cases within each section, good rounds conducted by competent members of the staff, the use of good medical films, the use of closed-circuit television, where feasible, and the use of members of nearby medical faculties at various times during the year. Staff meetings are a bore to many doctors. They are compulsory to maintain active staff privileges, and often they are a complete waste of a good evening that could be better spent with the family or a good book. Administrative matters should be reduced to a minimum. Seminars should be encouraged in order to better train each staff physician. These could easily be conducted by efficient heads of the various departments.◀

The Treatment of Allergy to Inhalants By Single Annual Injections of Emulsified Extracts

ETHAN ALLAN BROWN,* M.R.C.S. (England); L.R.C.P. (London), *Boston, Massachusetts*

►*The best emulsions used today are machine-made and consist of extract, two emulsifying agents, and two oils. A satisfactory emulsion cannot be made by hand. The injection must be administered in time for the patient to develop protection and the dose determined by clinical sensitivity and anticipated exposure.*◄

The term opsiphylactic signifies delayed protection. The patients receive, for example, during May or June, one injection of emulsified ragweed pollen extract. This single injection will, with limitations to be discussed, completely protect 85 to 95 per cent of those so treated for the duration of the pollen season (from August to middle or late October). The patient needs no protection after the pollen season is over, and therefore receives none. Another term used is enapothetic. It merely signifies stored for continued used.

*Director, Asthma Research Foundation.

Type of Emulsion

The more primitive emulsions consisted of extracts partially emulsified in sesame or peanut oils which were mixed with lanolin. Their use resulted in either systemic reactions or in nodules. The effects were variable because there were no standards for the degree of emulsification or of breakdown (cracking). Later emulsions used were prepared with an emulsifying agent (Falba) and with mineral oil. These were better although they contained less unemulsified extract. Systemic reactions occurred in 5 per cent of the patients treated. The effects were less variable because whatever part of the extract was emulsified was absorbed more slowly. The best emulsions used today are machine-made and consist of extract, two emulsifying agents (of which one prevents deterio-

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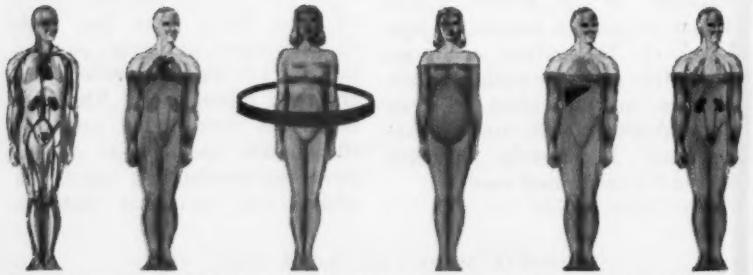

HYPERTENSION CONGESTIVE FAILURE PREMENSTRUAL TENSION EDEMA OF PREGNANCY CIRRHOSIS WITH ASCITES RENAL EDEMA

ration of the extract), and two oils, neither of which needs to be mineral oil. A stabilizing agent may be used, but is not necessary when the emulsion is prepared and injected within several hours. An emulsion sufficiently complete to satisfy present-day standards cannot be made by hand.

Today's emulsions are "complete" in the sense that by scratch or pressure puncture test and in the most sensitive patients, there is no local response and no systemic reaction. The physical, chemical, physiologic and immunologic properties of the emulsions have been studied.

Determining Degree of Emulsification

1. Centrifugation at high speeds with some of the emulsion spun in the oil of the continuous phase will separate, by artificial gravity, the unemulsified extract which, in the oil, is visible as a drop of water.

2. When the emulsion conducts current, it may be assumed that there is an ionic chain of unemulsified extract which carries the current.

3. A drop of the emulsion can be placed on water. "Feathering" occurs as the dispersed or aqueous phase becomes continuous with the water. The diameter of the droplets can be measured with great accuracy. In our experiments it is of the order of 0.1μ with an occasional droplet of 1.0μ. In more familiar terms, the droplets are 1/254,000 of an inch in diameter. Photomicrographs show the diameters to be consistent.

There are other methods, but descriptions of the techniques would probably only be of interest to experts in the field. It may be of interest to know that with 0.5 ml. of extract emulsified in 0.5 ml. of the oils, the surface area of protection is of the magnitude of 300,000 $cm.^2$ The number of droplets in a present day machine made emulsion is 10^{15}, that is, one thousand million million.

Extracts Used

The extracts of the pollens, house dust or animal danders and of influenza vaccines must be free of glycerol or glucose. There are other substances which also hinder either true or complete and stable emulsification.

The extract must be potent and of the strength of 40,000 to 60,000 Protein Nitrogen Units (PNU), although it may be standardized by quantitative gel-diffusion techniques. The weight/volume extracts are worthless. Although any one lot may be usable, another batch representing the same weight/volume ratio may be from one-half to eight times stronger.

The pollen from which the extract is prepared must not be defatted. Any patient allergic to pollens of secondary importance must be treated with these or he may experience inexplicable short bouts of symptoms. Such symptoms are particularly noticeable when the patient is otherwise well, or when difficulties occur late in the season or after pollination has ceased. That these difficulties are caused by secondarily important pollens or molds has been substantiated by surveys and by skin, nose, eye, or lung provocative tests.

Skin Tests

Opsiphylactic treatment has relegated skin tests to a position of little importance. Such tests may measure something in a new and previously untreated patient, but there is no agreement as to what. Titration of the skin shows that the more allergic the patient, the more often larger test reactions to a dilute extract occur. However, there are many exceptions. There is the patient who is skin-test negative, but by provocative tests can be proven to be truly allergic to the pollen in question. There are patients with symptoms from the earliest to the latest days of exposure, but whose test responses are minimal; and other patients whose discomfort is minimal, but whose test responses are maximal. The test responses change from month to month as related to exposure. In women especially they vary from day to day. In more than half the patients they will be unchanged regardless of successful or unsuccessful treatment. In a good number of patients, despite freedom from symptoms, they will increase in size.

Eye Tests

These are less important. Some patients with nasal allergy or pulmonary allergy do fortuitously respond to a conjunctival test, but what is truly important is the patient's clinical history. Should his history show that he is affected late in any season and that his affliction ceases early, the degree of the test reaction does not mirror his clinical allergy. When the eye is not a shock organ, as in pollen asthma, it is not surprising that in many such patients no positive conjunctival reaction can be obtained. This does not mean that the tests are not useful or that any technician or unskilled physician can either perform or interpret them. It does mean that the significance of the conjunctival tests as an indication of the degree of allergic sensitivity is less than was once thought.

Determining the Dose

Forty years ago the patient

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morning dose controls
blood pressure all day

her food tastes better
(thanks to salt liberalization)

edema relieved
(shopping easier)

"cardiac fears" allayed
(zest for life returns)

received, as his first dose, 0.1 ml. of a tenfold dilution of the highest dilution of extract which elicited a positive skin test response. The increments of the amounts injected were arbitrarily chosen, e.g., 1, 2, 3, 7, 1.0, 1.5, 20, 30, 40, 60, 80, 100 units or equivalents of parts of 1.0 ml. But the skin test in such a patient might also represent an intracutaneous injection of 10 or 20 units which, as coseasonal treatment, supposedly gave the patient high protection. In this case the first six or seven injections, after the skin test of course, were placebo in type only because the patient, by his test response, had shown his ability to take as much or more than what had been injected.

When extracts prepared in saline are used, the patient may suffer a systemic reaction with a dose far below those needed for protection. But, experience proves that such patients need more rather than less extract, and with properly emulsified extracts, the larger amounts can safely be administered. If emulsified extracts have done nothing else, they have offered for the first time in medical history satisfactory relief to such patients. For the more sensitive patient who has never before received treatment, a conditioning injection may be given. It may be represented by 100 to 1000 units, although with extract prepared in saline, a systemic reaction may, in such patients, follow the injection of one unit or less.

Dates of Treatment

The quantity given depends not on a formal schedule but on the patient's clinical history. The more sensitive patient receives the greater quantity. The patient who reports early, e.g. in April, also receives the higher dose. The patient who takes his treatment in early August receives a lower dose which is so prepared and injected intramuscularly for rapid absorption.

According to studies involving more than 16,000 injections of emulsified extract, the quantities represented by 1000 to 5000 PNU are more often associated with mild symptoms. But human variation is a factor as is the amount of exposure. Some patients do well with smaller amounts, but more do better with doses of 10,000 to 20,000 PNU given at one time, in one dose, and from four to 12 weeks before the anticipated exposure.

When a patient who has not been treated for grass pollinosis reports for an injection of ragweed pollen extract during the grass pollen season, the amount may be smaller. Two injections three weeks apart may be given should symptoms caused by grass pollen be present. If the patient reports for treatment

during a spell of rainy weather and is symptom-free at that time, the full amount is usually administered.

Systemic Reactions

With machine-made emulsions as prepared today, these are so few and so mild that the possibility can safely be ignored. If we do not count three reactions caused by the ingestion of alcohol and two or three associated with the ingestion of foods to which the patients were allergic, we saw six reactions in 1501 successive injections of ragweed pollen extract. All of these occurred before we began to use present-day emulsions; none has occurred since.

Ill Effects

Administration of emulsions made by hand may be followed by a systemic reaction. In earlier studies the patients were protected by use of an antihistaminic agent or epinephrine added to the extract, or both. Patients never before treated with the emulsified extract now receive an oral antihistaminic agent,* or if they are traveling by plane, an injection of long-acting epinephrine† in a dose of 0.1 or 0.15 ml., placed subcutaneously and proximal to the site of deposition. This is done more for legal than for medical purposes.

When the extract or the emulsion or the needle is not sterile, the same type of hot or cold abscess which follows an injection of unemulsified extract may occur. The system must then be a closed one and the chain of sterility not broken.

Possible Carcinogenic Effects

Mineral oil as prepared for human consumption is washed with an alkali and as well with acid and with water. It is not carcinogenic when taken orally; it is absorbed and for some time stored in the liver as though it were of animal or vegetable origin. There are no local pathologic types of reactions either in man or in animals.

Biopsy of local areas shows evidence of inflammation and of necrosis. Such pathologic reactions are not distinguishable from those which follow the injections of unemulsified pollen extract and any number of other injected substances administered in oils or in beeswax. Perhaps one patient in 2000 shows a tendency to form small nodules. Should these not vanish in a matter of weeks, such patients should not be treated with emulsions containing mineral oil. There are substitutes, and virtually no oil of mineral origin need be used.

**Polaramine®*, Schering Corporation, Bloomfield, New Jersey; or *Actifed®*, Burroughs Wellcome & Co., Tuckahoe, New York.
†*Susphrine®*, Brewer & Co., Inc., Worcester, Massachusetts.

When applied topically and daily for one year, Arlacel 20 (not Arlacel A, i.e. mannide monoleate) can, with half strength application of 9:10 methyl - 1:2 benzathracene, produce tumors similar to those induced by the full strength of the carcinogenic agent. But Arlacel A is not Arlacel 20. It is not applied to the skin daily, and the mineral oil as stated is not carcinogenic. Injections of mineral oil have been used for years with no ill effects.

Summary of Present Knowledge

The extract must be prepared from undefatted pollen. It must be fresh and active. The emulsion must be made with droplets no greater than the range represented by 0.1 to 1.0μ. The injection must be administered in time for the patient to develop protection. The dose must be determined in accordance with clinical sensitivity and anticipated exposure. However, within general limits, the amount of exposure hardly matters unless the patient directly handles pollen or plants.

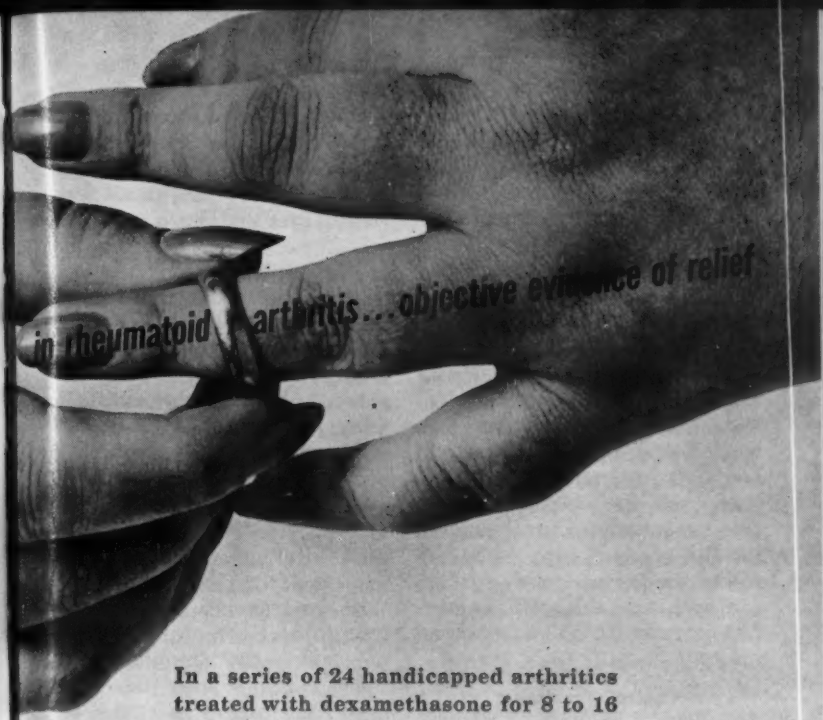
Commercial Availability

It takes an exceedingly well-trained allergist to determine which pollens should be injected, what quantity of each is needed, which emulsion should be used, which is the proper site of deposition (intramuscularly for the patient who reports just before the season) and what total amount of emulsion is needed. An injection of 1.0 ml. of 10,000 PNU will be absorbed more slowly than 0.25 ml. of 10,000 PNU, and 1.0 ml. injection of 2500 PNU will again be absorbed at the same rate as 1.0 ml. of 10,000 PNU, but the patient will receive fewer units of pollen extract in the span of time involved.

It takes experience as well as skill to decide on the quantity of extract and the total amount of emulsion needed to protect the patient for the required period of time. Those patients whose symptoms last for four weeks are treated differently from those who suffer for all of the season. The patient with little, although prolonged, exposure is not treated as is the patient with a shorter period of greater exposure.

There are methods of anticipating the overall aspects of the season, and should it appear that the amount of pollen will be less, the patients receive less. But again, the individual's particular situation must be considered; e.g., the patient who plans to drive from Boston to Seattle, with his departure planned preceding the Labor Day weekend, should be given greater protection.

The phrase "not for the faint-



In a series of 24 handicapped arthritics treated with dexamethasone for 8 to 16 months, ring size decreased consistently—objective evidence of antirheumatic effects which were maintained throughout the entire period of observation. Improvement was also noted in other antirheumatic indices, i. e., pain on motion, tenderness, swelling and morning stiffness.[1]

Supplied: as 0.75 mg. and 0.5 mg. scored, pentagon-shaped tablets in bottles of 100. Also available as Injection DECADRON Phosphate and new Elixir DECADRON. Additional information on DECADRON is available to physicians on request. DECADRON is a trademark of Merck & Co., Inc.

Reference: 1. Bunim, J. J., in Hollander, J. L.: Arthritis and Allied Conditions, ed. 6, Philadelphia, Lea & Febiger, 1960, p. 364.

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Dexamethasone

TREATS MORE PATIENTS MORE EFFECTIVELY

hearted" has been used by allergists who stated publicly and privately that it took courage to administer an injection of unemulsified extract, and that they lacked this particular virtue as regards the injection of larger amounts of extract in emulsified form. The injection of emulsified extracts makes the practice of allergy more complex. Emulsions of several types and of at least six concentrations are needed, and mixtures of emulsified extracts must be custom-made for individual patients. The commercial sources should, for the present, supply the extracts. However, none of them can prepare stable, safe, emulsified extracts suitable for general use.

Cost of Treatment

The cost of one pollen season of treatment is usually less than the patient has in the past paid for a work-up. A patient who reports that symptoms are present from mid-August to frost would first receive tests only for the pollens of ragweed and other autumnal pollinating plants. If symptoms occur during damp weather, he may be tested to those molds present in his area. Should difficulties occur when heating systems are turned on, he may be afflicted by house dust. The studies, the injections, whether combined or separate, (if not combined, no more than three) and any supplemental medication should not cost more than from $60 to $90 for all three sensitivities and for a symptom-free season. Treatment for two or three pollen seasons almost doubles and trebles the cost.

Patients pay these fees cheerfully and willingly. They do not pay for the skin tests or the injections, but for the saving of time, trouble, money and for a season during which no activity need be limited. For traditional programs of treatment they paid so much for tests, so much for each injection, so much for each trip to the physician's office. With programs of emulsified extract injection treatment they do not suffer the frequent injections, the sore arms, the swellings, the systemic reactions, and the many years of treatment because the season of symptoms was always the worst pollen season ever.

Local Pollen Count

The so-called pollen count is of academic interest only. It is not in any sense related to the patient's exposure or symptoms. When it is supposedly low, some patients may suffer less. When it is supposedly high, some may be more severely afflicted. The patient's exposure may represent a fraction of the count or else thousands and occasionally mil-

lions of multiples of the pollen count. The pollen slide tells us only what pollen has impinged on it. The patient inhales pollen grains in different quantities throughout the day, absorbs their contents at variable speeds and responds differently, depending on states non-allergic in nature. The patient may walk through a lot in which ragweed is pollinating, and on the lee side of the slide, inhale billions of pollen grains, none of which reach the slide.

Safety of Emulsified Extract

I would never under any circumstances permit anyone to give me an injection of unemulsified extract, however dilute. More than 300 allergists have taken or received injections of emulsified extracts or vaccines. To prove the safety of the procedure, we no longer test these allergists, although in some we do the tests after administration of injections. Not one has suffered an adverse reaction.

More than 150 allergists have now treated more than 35,000 patients with machine-made emulsions. I know of none who will return to other types of treatment. Those who have attempted to prepare emulsions by hand have given their patients severe systemic reactions. Their results have also been poor because too much of the extract was excreted too quickly, and only a little of it could therefore be antigenic.

It will be some time before every allergist has been trained, has built and furnished a laboratory, and has acquired or taught responsible aides. Until this has been done, no patient should be denied traditional treatment. No one outgrows an allergy, and any type of injection treatment is better than none at all.

A final word of caution. There are no two polarities greater than those between the amateur and the professional. An amateur who thinks he can train himself will get into difficulties. Bibliographies and reprints concerned with treatment with emulsified extracts are available on request; training, without charge, is available to qualified physicians.◀

In most cases where lethargy and fatigue are a problem—in menopause, senility, convalescence, oversedation, and mild depression, for example—the gentle stimulant action of Ritalin safely restores normal physical and mental activity. Summarizing the results of therapy with Ritalin in 89 patients who were either chronically ill, convalescing, depressed, or oversedated, Natenshon* states: "They were alert, fatigue disappeared, and they could go all day without tiring."

SUPPLIED: *Tablets,* 5 mg. (pale yellow), 10 mg. (light blue), 20 mg. (peach colored).

For complete information about Ritalin (including dosage, cautions, and side effects), see 1961 Physicians' Desk Reference or write CIBA, Summit, N. J.

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*Natenshon, A. L. Dis. Nerv System *17*:392 (Dec.) 1956.

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CIBA Summit, N. J. 2/2970MB

Clinical Indications for Gamma Globulin Therapy

WARREN ZUNDELL, M.D.,* *Coral Gables, Florida*

►*Use has formerly been largely limited to prevention or modification of poliomyelitis, infectious hepatitis, measles, and German measles. More recent tests have shown that it is of value in prevention of common colds, recurrent upper respiratory diseases, a wide variety of bacterial infections, and asthmatic attacks.*◄

A clinical entity first described by Bruton in 1952, the "agammaglobulinemia syndrome," is characterized by recurrent bacterial infections, mainly of the respiratory tract.[1] Patients having this syndrome were usually found to have a deficiency or a complete lack of serum gamma globulin, especially of its antibody fraction, and a significant reduction in circulating antibodies. Treatment with intramuscular gamma globulin produced very favorable results.

All of the patients in early reports were male children. Since then it has become evident that there are two forms of the condition: the congenital form in male (and probably female) children as originally described, and the acquired form in adults of either sex. The pathogenesis of the disorder is unknown.

In the four years following the original report, only 49 cases were reported in the literature; 30 were of the congenital form and 19 of the acquired form. These reports were also of value in that they stimulated a search for further use of gamma globulin in clinical medicine.

The use of gamma globulin has largely been limited to the prevention of poliomyelitis in nonimmunized individuals after exposure, the prevention of infectious hepatitis, the prevention of German measles in the first trimester of pregnancy, and, probably its greatest use, the modification of measles before the

*Abbey Medical Center, Coral Gables, Florida.

1. Durham, R. H., Encyclopedia of Medical Syndromes, P. B. Hoeber, Inc., 1960.

2. Mazzittello, W. F., & Good, R. A., *Postgrad. Med.*, 20:2,1956.

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• potent, longer-acting than other miotics • two instillations weekly are often sufficient to control glaucoma • because it is unusually potent, it may be uniquely useful in breaking up peripheral synechiae • aqueous—isotonic with conjunctival fluid • stable—refrigeration not required • 0.25% ophthalmic solution, in 5-cc. bottle with dropper

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rash appears in an exposed individual. Its use has been shown to significantly reduce the incidence of the common cold (from 49 per cent to 9 per cent) when tested in some 1000 volunteers for about one year.

The use of gamma globulin was reported[3] in combination with antibiotics in a wide variety of bacterial infections in 46 patients, all of whom had been previously unresponsive to what was considered to be adequate therapy. Favorable results were reported in 67 per cent of these patients after gamma globulin was introduced into their therapy. Since it was difficult to evaluate the exact role that gamma globulin played in the improvement of these patients (because other therapeutic measures were being used at the same time), only six cases were reported as clearly showing that the addition of gamma globulin was of definite benefit. Of these, four had chronic osteomyelitis, one had recurrent pneumonia, and one had purulent arthritis.

Material and Methods

In this report, results in 12 patients unresponsive to the usually accepted adequate therapy are given. Most were treated over a period of many months and are still under treatment. Strong attempts were continually made to keep these patients from receiving any other medications. Treatment was started on the basis of history and physical examination, only. Laboratory studies were not done, since the basis of the study was to determine clinical criteria for treatment which could be used without depending upon a laboratory.

All children were started on ¾ to 1 cc. monthly, the intervals then being extended to six weeks or two months or more, depending upon the clinical response. For adults the starting dose was 1.5 to 2 cc. monthly. The gamma globulin used was the standard, commercially available, 16.5 per cent globulins.

It will be noted in Table 1 that some patients in this study suffered from allergies rather than recurrent infection, as detailed in earlier reports. The first three cases are reported in detail.

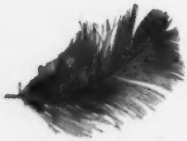
Case Reports

Case 1

A girl, age 4 when first seen, for the 2½ years prior to starting gamma globulin therapy had been suffering from recurrent attacks of pharyngitis, tonsillitis, and otitis every four to eight weeks. With each infection her fever would run 102° to 104° F. For each episode of three to five days she was treated with antibiotics in adequate doses. Five days after she was started on gamma globulin therapy, she had an attack of pharyngitis with a fever of 102° and was given one injection

3. Waisbren, B. A., *Antibiotics & Chemother.*, 7:322,1957.

it takes so little to trigger an asthmatic attack...



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"Superiority of [MARAX] seems attributable to the inclusion in it of hydroxyzine in place of the conventional barbiturates."[2] In a series of patients generally refractory to the usual antiasthmatics, and who required steroids in order to obtain temporary relief, 70% showed good to excellent symptomatic relief with MARAX. Patients "...slept more comfortably and breathed more easily. The characteristic asthma wheeze was either markedly reduced or entirely relieved."[3]

If your asthma patients do not respond to standard therapy, they may need the "little MORE" that MARAX offers.

MARAX®

Usual adult dosage: one tablet 2 to 4 times daily. Full prescription information on request. Supplied: Bottles of 100 light blue, scored tablets. Prescription only.

References: 1. Santos, I. M. H., and Unger, L.: Ann. Allergy 18:172 (Feb.) 1960. 2. Charlton, J. D.: Ann. Allergy, in press. 3. Shaftel, H. E.: Clin. Med. 7:1841 (Sept.) 1960.

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TABLE 1

RESULTS OF GAMMA GLOBULIN THERAPY IN 12 PATIENTS

CASE	SEX	AGE RX STARTED	SYMPTOMS	MONTHS UNDER OBSERVATION OR RX	RESULTS	REMARKS
1	F	4	Recurrent pharyngitis, tonsillitis and otitis every 4 to 8 weeks	61	Good	Last injection 4 months ago. Two mild attacks of pharyngitis since.
2	M	4	Recurrent pharyngitis, tonsillitis and asthma	45	Excellent	Last injection 7 months ago. 32 months without illness or asthma.
3	M	28	Asthma, allergic	40	Excellent	Last injection 2 months ago. Father of patient #2. No illness or asthmatic attacks since Rx started.
4	F	36	Recurrent pharyngitis, many years	27	Good	Last injection 2 months ago. Attacks reduced in frequency and severity. Takes thyroid for mild hypothyroidism.
5	M	6	Recurrent pharyngitis, tonsillitis and colds every 3 to 4 weeks	26	Excellent	Last injection 2 months ago. No illness since Rx started, except for a mild otitis 8 months ago.
6	M	14	Nasal allergy	9	Good	Symptoms reduced, but also takes antihistamines.
7	F	7	Recurrent pharyngitis, tonsillitis and otitis every 2 to 4 weeks	7½	Excellent	Last injection 1 month ago. No illness in past 4½ months.
8	M	13	Intermittent fevers, probably due to viral respiratory infections	7	Excellent	No infections after 2 injections only.
9	M	12	Nasal allergy and asthma	6	Excellent	No symptoms after treatment started.
10	M	17	Nasal allergy	3½	Poor	No reduction of symptoms. Has had 3 injections to date.
11	F	44	Continual colds and post nasal drip for years	3	Promising	Moderate improvement.
12	M	31	Nasal allergy	2	Promising	Symptoms reduced, but still taking antihistamines.

of penicillin. The next day she was well, her temperature normal. This was the first time that she had ever recovered from an infection in one day. Gamma globulin was given at four- to six-week intervals for the next seven months. During that time she had several more infections, all mild, from which she would recover in a day or two. Up to the present time she has been given several more doses of gamma globulin at long, irregular intervals. Her last dose was five months ago. She has been well during all this time (53 months), except for two mild attacks of pharyngitis, recovering from both in one day after receiving an antibiotic. Results in this case were classified as good.

Case 2

A boy, age 4 when first seen, from age 2 years has had one attack of pharyngitis after another every few weeks. His mother stated, "He never seems to be free of a sore throat." He had always been treated with antibiotics and antihistimines (because he sometimes had asthmatic wheezing, also). He was well for one month after being started on gamma globulin therapy and then developed pharyngitis. No antibiotics were given, but he received his scheduled dose of gamma globulin. The next day he was well, temperature normal. During the next seven months he was given five more doses. During that time and up to the present he has been well except for chickenpox and a mild case of measles. He has had no further asthmatic attacks. He has been given a few more booster doses, the last one about nine months ago. Results were classified as excellent.

Case 3

A man, age 28 when first seen, father of patient whose case is numbered "2," has been an asthmatic for many years. For the three years prior to the start of gamma globulin therapy, he had been undergoing desensitization treatment with poor results. He was taking antihistamines daily in large doses to obtain some degree of relief. Other standard forms of asthma therapy were of only slight and temporary value. Because of the excellent results obtained in his son, he asked if he could have the same treatment. Since gamma globulin therapy was started, he has been completely free of asthmatic attacks and in good health. He still receives 2 cc. per month. He refuses to stop treatment to attempt to find out how long he can go without the medication. He takes no other medications or treatments. Results were considered excellent.

Conclusions

Gamma globulin is an excellent prophylactic against recurrent respiratory tract infections and is of value in preventing asthmatic attacks. Results would indicate that poor resistance to infection and the allergic state may have a common etiology, i.e., a deficiency of gamma globulin in the antibody system.◀

Emergency Treatment of Bleeding Esophageal Varices

R. W. POSTLETHWAIT, M.D.,* *Durham, North Carolina*

►*Massive bleeding from esophageal varices can usually be controlled by tamponade with the Sengstaken-Blakemore tube. Attention to details and constant supervision are necessary to avoid complications, both those due to the tube and those due to the disease. Portacaval shunt may be performed later.*◄

Esophageal varices are being identified as the cause of upper gastrointestinal hemorrhage in increasing numbers of patients. It is not known whether this is the result of increased interest in esophageal varices, better diagnostic methods, or an actual increased incidence of conditions leading to such bleeding.

The esophageal varices are collateral vessels which appear in the presence of portal hypertension. The latter may be due to extrahepatic obstruction in the form of portal vein thrombosis due to one of many causes, but in over 80 per cent of patients, portal hypertension is secondary to cirrhosis of the liver. Approximately 20 per cent of all those with cirrhosis will have bleeding from esophageal varices.

The cause of bleeding from the varices has been of interest, as the numerous thin-walled collateral veins in other areas rarely, if ever, are the site of hemorrhage. The various factors considered include the increased pressure in the esophageal varices causing marked thinning of the mucosa so that the slightest trauma results in rupture. Reflux esophagitis has been implicated in nearly half the cases. Alterations in coagulation factors due to the liver disease or to thrombocytopenia probably are not important in the initiation of hemorrhage but do tend to sustain the bleeding. Practically all patients with this condition also have varices at the cardia of the stomach and these vessels may be the source of

*Veterans Administration Hospital, Durham, North Carolina.

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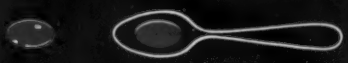
POVAN is well tolerated... readily accepted in both dosage forms... and not appreciably absorbed through the gastrointestinal tract. Its single-dose efficacy makes therapy not only convenient, but economical as well.

Supplied: POVAN is available in suspension or tablet form. The pleasant-tasting, strawberry-flavored suspension is supplied in 2-oz. bottles and the tablets in bottles of 25.



The suspension contains pyrvinium pamoate equivalent to 10 mg. pyrvinium base per cc. The sugar-coated tablets each contain pyrvinium pamoate equivalent to 50 mg. pyrvinium base. *Dosage:* Children and adults, a single oral dose equivalent to 5 mg. per Kg. of body weight. *Precautions:* Infrequent nausea and vomiting and intestinal complaints have been reported. Tablets should be swallowed whole to avoid staining teeth. Will color stools a bright red. Suspension will stain most materials.

PARKE-DAVIS

hemorrhage.

The differential diagnosis of massive upper gastrointestinal hemorrhage is obviously important but a detailed consideration of diagnosis is beyond the scope of this discussion. Assuming that a diagnosis of hemorrhage from esophageal varices has been established, the problems are control of hemorrhage, replacement of blood loss, and prevention of complications.

Control of Hemorrhage from Esophageal Varices

This is most effectively obtained by balloon tamponade, utilizing the Sengstaken-Blakemore tube.[1] Successful control of hemorrhage is reported in between 80 and 90 per cent of the cases. This triple-lumen tube has attached an esophageal and a gastric balloon with an extension beyond the latter from which the largest lumen opens. The tube is anchored by the gastric balloon, which also compresses the varices in the cardiac end of the stomach. The esophageal balloon provides tamponade of the varices in the esophagus. Through the distal opening, the stomach can be aspirated or medication and food administered.

The Sengstaken-Blakemore tube must be used properly to be effective and to avoid complications. Before use, it should be checked for patency and for symmetry of the balloons. In passage, the tube should not be forced as it is rigid enough to cause perforation of the esophagus. After the tube is in place and the gastric balloon inflated, the position should be verified by a roentgenogram.

Tension is maintained on the tube to hold the gastric balloon in place against the cardia of the stomach by impinging the sponge rubber block (supplied with the tube) against the nose. Excessive traction must be avoided as pressure necrosis of the stomach wall may result. The esophageal balloon is kept inflated by attaching this part of the tube to a water trap system.[2] This is less rigid than clamping the tube and provides a cushion when esophageal pressure is increased by peristalsis, coughing, or other strain. Care must be taken that pressure not be so high as to cause necrosis.

After the tube is in place, the stomach is aspirated until the return is clear. Suction is then maintained, with frequent irrigation, to be certain that no further bleeding has occurred. Oropharyngeal secretions are not swallowed, but are either expectorated or removed by aspiration. Excess sedation must be

1. Sengstaken, R. W., & Blakemore, A. H., *Ann. Surg.*, 131:781-789,1950.

2. Brunjes, S., *J.A.M.A.*, 162:110-111,1956.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avoided. Constant nursing attention is necessary as position and pressure in the balloons must be maintained and irrigation is required repeatedly. In the unconscious patient, the mouth and pharyngeal secretions must be aspirated. Should the gastric balloon break, the inflated esophageal balloon may be displaced into the pharynx and cause asphyxia unless promptly deflated.

The balloons should remain inflated from 36 to 48 hours after bleeding has stopped. The esophageal balloon is first deflated, the patient observed for several hours, and then the gastric balloon deflated. The tube is left in place for at least 12 more hours and then removed. Recurrence of hemorrhage will require replacement of the tube, which is then left in place until a definitive surgical procedure can be accomplished.

The necessity for prompt and adequate restoration of blood volume by transfusion of whole blood is obvious.

Complications Following Hemorrhage

One of the most frequent complications is pulmonary infection. Aspiration must be avoided and adequate oxygenation provided. A broad-spectrum antibiotic should be given. Neurologic complications may be manifested by restlessness, disorientation or coma. The cerebral alterations may be due to alcohol withdrawal, nitrogen retention, or ammonia intoxication; all three may be contributory. In addition, sodium and water retention may be present. Careful administration of sedatives, water, and electrolytes is therefore necessary.

Ammonia intoxication is produced by intestinal bacteria acting on ingested protein (in gastrointestinal bleeding, blood is a major source) which produces ammonia that is not converted promptly due to liver damage or bypass of the liver. Treatment consists in control of the bleeding, cathartics and enemas to eliminate the protein, and an oral antibiotic to decrease the bacteria. Glutamic acid or arginine parenterally may be of value.

Surgical Intervention

Should the hemorrhage from the varices fail to stop, or recur promptly after removal of the tamponade, surgical intervention may be necessary. The procedures which may be employed are ligation of the varices, emergency shunt, or esophagogastric resection. Ligation of the varices, either through a thoracic or abdominal approach, provides immediate control of the bleeding. In most of the patients with

intrahepatic block, however, bleeding is likely to recur, although rarely before six to eight weeks. The major objection to this ligation is that the patient has been subjected to a major operation which is not definitive. For this reason, emergency portacaval shunt has been utilized by some surgeons. The bleeding from the varices almost invariably stops promptly and a definitive procedure has also been accomplished. The mortality rate has been exceedingly high in those patients with severe liver function impairment. Esophagogastric resection will at times be necessary, particularly in the patient with extrahepatic block who has previously had a splenectomy. This is a procedure of considerable magnitude, and the mortality may be considerable if performed as an emergency procedure.

Summary

Massive bleeding from esophageal varices can usually be controlled by tamponade with the Sengstaken-Blakemore tube. Attention to details and constant supervision are necessary to avoid complications, both those due to the tube and those due to the disease. Pressure necrosis and aspiration pneumonitis are frequent complications of the tube. Increased liver damage, pulmonary infection, ammonia intoxication, nitrogen retention, and anuria are common complications of the disease. If the patient survives the acute episode, a portacaval shunt performed later will provide effective prophylaxis against further bleeding.◀

Topical Cream for Pyogenic Infections

The effectiveness of 2 preparations (Triburon and Triburon-HC), both containing 0.1% trichlobisonium chloride in a vanishing cream base (with 0.5% hydrocortisone added in one), was studied in 118 patients aged 3 months to 74 years. Of the 68 given the plain cream, results were excellent in 21 and good in 39. Of the 50 given the steroid-containing cream, results were excellent in 7 and good in 36. In general, the response of bacterial and monilial infections (whether primary or secondary) was good, but tinea infections did not respond.

Smith, G. C., *J. South Carolina M.A.*, 56:176-179,1960.

Chest Injuries

GEORGE D. BUCKNER, M.D., *Fort Wayne, Indiana*

►*Initial treatment consists of re-establishing normal pulmonary physiology, combating shock, and relieving pain. Although no x-ray evidence of injury is present, a severe blow may cause cardiac bruise, which must be diagnosed by serial EKGs. Severe blows may also cause rupture of the diaphragm.*◄

Chest injuries, regardless of their etiology, must receive proper treatment as soon as possible if good end results are to be obtained. Recognition of certain types of injuries, such as cardiac contusions, may be very difficult on first inspection. In treating chest injuries, one must reestablish normal pulmonary physiology (as nearly as possible), combat shock, relieve pain, and be on the lookout for other complications which may develop later.

Normal pulmonary physiology is often restored by removal of air or blood from one hemithorax where it is compressing the lung, or by supporting a crushed chest by external skeletal traction to prevent paradoxical motion and inadequate exchange. Any method that aids in reestablishing respiratory exchange at near normal volume is necessary treatment when dealing with chest injuries.

Open Chest Injuries

The open chest injury may be caused by penetrating or perforating wounds, or in some cases by avulsion of segments of chest wall. Regardless of cause of injury, step number one is to convert the open chest wound to a closed one as soon as possible. This can be done by debridement and suture of the wound, or by closure of the opening with bandages or tape until suture closure can be done.

Closed Chest Injuries

After conversion of an open chest wound to a closed one, the problem is to reexpand the collapsed lung by reestablishing the negative intrathoracic pressure. Thoracentesis with removal of

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INHERENT SUSTAINED ACTION—After absorption theophylline is slowly eliminated during a 9-hour period.[7] Clinically *proved* relief and protection day and night with t.i.d. dosage.[1,3-6,8,9]

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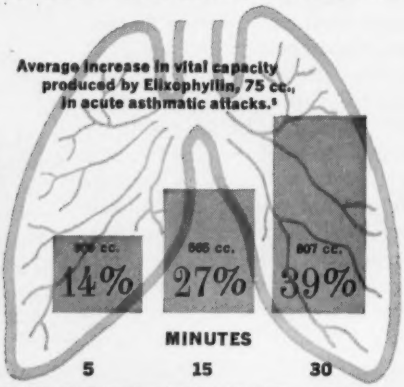
Each tablespoonful (15 cc.) contains theophylline 80 mg. (equivalent to 100 mg. aminophylline) in a hydro-alcoholic vehicle (alcohol 20%).

ACUTE ATTACKS:

single dose of 75 cc. for adults; 0.5 cc. per lb. of body weight for children.

24 HOUR CONTROL:

for adults 45 cc. doses before breakfast, at 3 P.M., and before retiring; after two days, 30 cc. doses. Children, first 6 doses 0.3 cc.—then 0.2 cc. per lb. of body weight as above.



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Patent Pending

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air from the pleural space may be sufficient to accomplish this. For this, the patient is placed semi-erect in bed with the backrest elevated to 45° or 50°. An area on the anterior chest wall between the second and third rib in the mid-clavicular line is prepared and infiltrated with novocaine. A large 50-cc. syringe, fitted with a 3-way stopcock and a 16 bore needle with a relatively short bevel, is then used to aspirate air from the chest. A series of x-ray pictures watches the progress of the expanding lung during the next 24 to 48 hours.

If repeated aspirations have to be made to keep the intrapleural negative pressure, it is perhaps easier to insert an inter-rib catheter. This is done with the patient in the same position and preparation of the same area as for thoracentesis, the only difference being that a trochar and cannula will be pushed between the ribs, the trochar removed and a catheter passed through the cannula and then the cannula removed over the catheter. This is done with minimum air leak and by connecting the catheter to an underwater seal so that respiratory motions cause air to leave the hemithorax and not to reenter. With this procedure and a lung that is leaking only a little air, the lung should be reexpanded within 72 hours. If it is not, open thoracotomy may have to be resorted to in order to suture the torn lung or bronchus.

Recognition

Recognition of a torn bronchus or trachea may be easy, for many patients show marked dyspnea, hemoptysis, rapidly forming subcutaneous emphysema, pneumothorax, and cyanosis. If large amounts of air escape from the catheter which has been placed in the pleural space, tracheal or bronchial rupture should be suspected. If a lung which has been reexpanded suddenly goes down and tension pneumothorax develops, a bronchial or lung parenchymal tear should be suspected. This can occur to bronchi that are nearly ruptured by the original injury and are later completely ruptured by coughing against a closed glottis or by necrosis of the damaged portion of the bronchus some weeks after the injury.

Confirmation of the tracheal or bronchial injury may be by bronchoscopy at which time many lacerations may be seen. Bronchoscopy should be performed in patients who show bronchial obstruction and failure of a lobe or lung to expand, as well as in patients with persistent air leak. The sooner this is done after initial stabilization of

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1. Reports from 363 investigators to the Medical Department, Armour Pharmaceutical Co., 1959. 2. Cornbleet, T. and Chesrow, E. J.: Arch. Dermat., to be published, 1960.

Each gram of Chymar Ointment contains: 1.25 mg. of Hydrocortamate HCl; 3.5 mg. of Neomycin Palmitate (as base); 10,000 Armour Units of Proteolytic Activity (as provided by a concentrate of proteolytic enzymes from pancreas); in a water-miscible ointment base. To administer: Place Chymar Ointment in external canal. Insert cotton. Remove after 24 hours and rinse canal. Chymar Ointment is available in ⅛ oz. and ½ oz. tubes with special otic tip for ease of administration.

CHYMAR OINTMENT—Chymar Ointment is a corticosteroid-antibiotic-enzyme preparation, providing anti-inflammatory and anti-infective actions with wound and tissue cleansing. Each gram contains: a concentrate of pancreatic enzymes with 10,000 Armour Units of proteolytic activity; neomycin palmitate (as base) 3.5 mg.; hydrocortamate hydrochloride 1.25 mg.; water-miscible base (polyethylene glycol 4000 and 600) q.s. The enzymes digest necrotic tissue, pyogenic membranes and crusts, cleanse wounds and remove foul odors. Thus the area of the lesion is prepared for the anti-infective and anti-inflammatory effects of neomycin palmitate and hydrocortamate hydrochloride. It is believed that proteolytic enzymes have a favorable effect on wound healing. INDICATIONS: acute or chronic dermatoses and skin lesions such as abscesses, boils, burns, contact dermatitis, impetigo, infectious eczematoid dermatitis, mycosis fungoides (for secondary infection), infected neurodermatitis, pruritus ani, psoriasis, pustular lesions, seborrheic dermatitis, stasis dermatitis, ulcers (topical, cautery, osteomyelitic, varicose). PRECAUTIONS: An occasional itching or stinging sensation may be encountered on initial application. Hypersensitivity or allergic reactions are rare; pharmacological tests gave no indication of irritation, allergic or antigenic reactions when used on either intact or abraded skin. Proteolytic action can be halted by removal of the ointment and irrigation with water. CONTRAINDICATION: Not for ophthalmic use. ADMINISTRATION: Apply directly to lesion 1 to 3 times daily and cover with gauze. Preliminary softening of eschar or crusted lesions not necessary. SUPPLIED: ⅛ oz. and ½ oz. tubes.

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the patient the better the healing of the ruptured bronchus will be after it is sutured. Suturing of a bronchus necessitates thoracotomy, but with reasonable stabilization of the patient, this represents less risk than that of infection and the development of a bronchial stricture with its resultant collapsed pulmonary parenchyma.

Tension pneumothorax may also develop with a torn bronchus, a condition triply dangerous, for not only does it collapse the lung on the affected side, but it pushes the mediastinum toward the functioning side and impairs its respiratory function. At the same time it interferes with blood return to the heart and with proper cardiac action. This condition must be treated as soon as possible and steps taken to prevent its recurrence.

Aspiration of Fluid

If the lung is compressed not only by air but also by fluid, e.g., blood, it may be necessary to aspirate the hemithorax at the eighth interspace in the anterior axillary line. The anterior position is not necessary when single thoracentesis is being done, but when an inter-rib catheter is inserted here, it is out of the way so that the patient can lie in bed without compressing the tube to the drainage bottle and underwater seal.

It is important to reexpand the lung as rapidly as possible and if blood or fluid compresses it for too long a period of time, a fibrous exudate may form over the visceral pleura and entrap the lung, necessitating open thoracotomy and decortication of this thick fibrous peel. If the intrathoracic fluid can be evacuated and the lung reexpanded, this complication may be avoided. Should bilateral injury be present, inter-rib catheters may be used on both sides of the chest and in both high and low positions if need be.

Patients with chest injuries of this type should be watched carefully for shock and blood loss and treated with blood, oxygen and general supportive measures. They should be x-rayed as frequently as necessary to determine whether the lung is expanding and to determine the position of the mediastinum. If blood loss becomes severe or if the lung fails to reexpand, open thoracotomy is the procedure of choice. Most chest injuries will respond better to the type of conservative therapy outlined than immediate thoracotomy.

Crushing Injuries

Crushing injuries of the chest are usually of the closed type but

original article

may cause open wounds. Such an open wound is closed as rapidly as possible, and then the problem of the crushed chest is handled. The mechanics of breathing require a strong thoracic wall so that when the diaphragm descends and the chest cage enlarges, the negative pressure in the pleural spaces increases and air from outside passes only through the airway, causing the lung to expand to fill this space. On expiration the chest decreases in size and the diaphragm raises, the elastic tissue in the lung parenchyma causes the lung to contract and air is forced through the glottic chink and out through the air passages. When a number of ribs are broken (often in several places so that the chest wall is unstable) and when the diaphragm goes down, the chest wall is pushed in by the outside air. When on expiration the diaphragm comes up, the air in the lung pushes outward against the unstable chest wall easier than it passes the glottis. The result is unsatisfactory O_2-CO_2 exchange, since air is trapped in the lung. This paradoxical respiration is corrected in two ways:

1. The glottic resistance can be removed by tracheostomy, which will aid respiration and make easier the keeping of the respiratory passages clear of blood, mucus and other secretions.

2. The chest wall may be stabilized by external skeletal traction, which may be applied in various ways. One that is generally available is as follows: An inch out from either side of the sternum a towel clip is applied to the second rib and locked; tape is placed around the box lock to prevent its disengagement; the handles of the two clips are approximated and a traction rope inserted through them to a pulley directly overhead and thence downward to a pulley at the end of the bed. About 8 to 10 lbs. of weight is then applied, the amount necessary to stabilize the chest wall against respiratory movements. It is well to have the patient on an air mattress with pulsating pressures to prevent bed sores. After three weeks, chest traction is to be reduced gradually. When all of the weights are off without disturbing the patient, the towel clips may be removed. The tracheostomy tube may be occluded at about this time, and if this is tolerated, the tube may be removed in several days and the tracheotomy wound taped closed and dressed as necessary. The tracheal fistula should heal in about a week.

Other Results of Chest Injuries

Crushing injuries to the chest

For the irritable G.I. tract

Milpath acts quickly to suppress hypermotility, hypersecretion, pain and spasm, and to allay anxiety and tension with minimal side effects.

AVAILABLE IN TWO POTENCIES

MILPATH-400—Yellow, scored tablets of 400 mg. Miltown (meprobamate) and 25 mg. tridihexethyl chloride.
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WALLACE LABORATORIES *Cranbury, N. J.*

may cause damage to intrathoracic organs even when no ribs are fractured. A history of a severe blow on the chest causing loss of consciousness should always be considered serious, even if x-ray examination shows no fractures or intrapleural air or blood. The reason for this is that a cardiac bruise may have been sustained which may not show symptoms for 10-14 days. When the bruised area lets go, like an infarcted area of myocardium following a coronary occlusion, the patient may die suddenly. It is wise to run serial ECGs on these patients and to restrict their activity for at least 3 weeks. If ECG shows changes, the patient should be treated as one with coronary disease.

Rupture of the diaphragm is a frequent result of heavy trauma to the chest. This, too, may occur without the x-ray showing rib fractures. The x-ray will show abdominal contents in the chest however, and the diagnosis is made easily. The treatment of this condition is surgical as soon as the patient's general condition allows. If the patient's condition does not stabilize and proper respiratory exchange cannot be obtained, immediate surgery may be a life-saving measure.

Other intrathoracic organs, such as the esophagus and the thoracic duct, may be ruptured and require surgical intervention, but these conditions are not usually recognizable for several hours after injury, and do not affect the immediate respiratory effort of the patient.◀

Findings on Glaucoma Testing Project

Examination of 396 adults (353 men and 43 women) with Schiotz tonometers revealed that 6 had elevated tension associated with suspicious field defet or optic nerve changes strongly suggestive of glaucoma. An additional 7 had tensions between 25 and 28 mm. Hg and 7 had tonometric measurements of 24 to 25 mm. Hg. Purpose of this project, conducted at a state medical meeting, was to encourage the family physician to look for early signs of glaucoma through use of the ophthalmoscope and tonometer during routine physical examinations of all persons over age 40.

Garner, L. L., *Wisconsin M.J.*, 59:241-247,1960.

Treatment of Acne Vulgaris with a Formulation Containing Aluminum Chlorhydroxy Allantoinate

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►*Acne vulgaris in 90 patients was treated with an acne cream formulation containing aluminum chlorhydroxy allantoinate. Results were excellent in 24, good in 44, fair in 15, and unsatisfactory in seven. None had evidence of dermotoxicity. Concurrent use of an antiseptic pad gave improved results.*◄

Acne vulgaris is the most frequent type of skin disorder seen by the general practitioner and the dermatologist. The causal factors in the production of acne vulgaris have been singled out as follows:

1. Endocrine dysfunctions
2. Dietary indiscretion
3. Allergic background
4. Focal infection
5. Nervous tension

Complex hormonal factors may be a contributing agent in the production of acne,[1-3] since there is a relative increase of androgen to estrogen secretion. This dysfunction is more evident in the male than in the female patient. Excessive secretion of androgen is known to stimulate the sebaceous glands to excessive secretion which acts as a culture medium for the resident bacteria of the skin surface. In the male, acne is usually associated with an oily, greasy skin as with seborrheic dermatitis of the scalp. In the female, acne may occur with irregularity of menses, scant menses, and dysmenorrhea. Chin acne is observed usually in the third and fourth decade in the female in the premenstrual cycle. This type of acne is not related to injudicious dietary selection, but is hormonal in character.

It has been demonstrated that certain foods cause a flare-up of the acneous papules, pustules, and cysts. Adherence to a low

1. Wile, U. J., et al., *Arch. Derm. & Syph.*, 32:200,1939.
2. Lubowe, I. I., *Clin. Med.*, 59: (Aug.) 1952.
3. Sulzberger, M. B., & Witten, V., *J.A.M.A.*, 173:1911-1915,1960.

carbohydrate and lipid diet is important to reduce the excessive sebum secretion. Abstinence from chocolate, nuts, butter fats, homogenized milk, too much ice cream, iodized salt, and shellfish is essential. The foci frequently involved and which have to be examined as possible contributing factors to acne production are infection of the tonsils, sinuses, gums, and the gastrointestinal and genitourinary tracts.

Treatment

Lowered local cutaneous immunity may be benefited by treatment with vaccine-therapy, particularly the staphylo-sero bacterial vaccine.* More recently the introduction of antibiotics, as the sulfa and mycin drugs which can be given orally in diminishing dosage until a maintenance dose is arrived at, has resulted in the control of the pustular element in acne. In 300 courses of oral antibiotic therapy, the results were excellent in 13, good in 96, fair in 86, and poor in 17 patients.[3] This study indicated that no serious side effects were attributable to the sulfa drugs or the tetracycline antibiotics even though the patients were on this oral therapy from two days to six years.

Topical therapeutic agents are considered the most effective in treatment of acne. Best results are obtained by the use of precipitated sulfur, salicylic acid, and resorcinol because of their desiccating or keratolytic properties. The most popular preparations are Lotio Alba, U.S.P., and Kummerfield's lotion.

Material and Methods

The purpose of this study was to clinically evaluate a topical agent† in the treatment of various types of acne and its effect as a healing agent, as regards its drying effect, ease of use, nonstaining qualities, acceptable odor, cosmetic effect, washability, production of irritation, and effectiveness.

Colloidal sulfur is a keratolytic agent, hexachlorophene a bacteriostatic agent; aluminum chlorhydroxy allantoinate[4] has been reported to possess mildly astringent, non-irritating, healing, keratolytic, and antibacterial properties. Duration of therapy was from three to 24 weeks. In conjunction with the cream, the usual dermatologic agents were used, such as vaccine-therapy, special low carbohydrate and low

**Staphylo-strepto Serobacterin Vaccine*, Merck Sharpe & Dohme, Philadelphia, Pennsylvania.

†*Encare*®, Norwich Pharmacal Company, Norwich, New York. Composition of the cream is as follows: hexachlorophene, 1%; aluminum chlorhydroxy allantoinate, 2%; and colloidal sulfur, 5%.

4. Lubowe, I. I., & Mecca, S. B., Allantoin and Aluminum Derivatives in Dermatological Applications, *Drug and Cosmetic Industry*, January, 1959.

fat diet and, in patients over 18 years of age, superficial x-ray therapy, the maximum dosage being 12¼ skin units (75 *r*) during the course of therapy.

While the study with the cream was in progress, an antiseptic pad was furnished by the manufacturer as an adjunct to therapy. This pad was introduced in order to ascertain the efficacy and possible synergistic effect of an antiseptic pad. The antiseptic cotton pad was moistened with chlorothymol, benzalkonium chloride, and alcohol, 18.78%, and packed in an airtight paper container. The patient was directed to open the case and to rub the moistened pad over the face along the affected areas without the use of soap. The pad was rubbed into the involved areas continuously for one minute. The cream was used on the same involved areas following the application of the antiseptic pad. This procedure was followed at least twice during the day and three times during the weekends. Thirty of the 90 patients in the clinical study were given the pads to use.

Of the 90 patients in this study, 64 were aged 10 to 20; 18, aged 21 to 30; five, aged 31 to 40; two, aged 41 to 50; and one was over 50 years. There were 46 men and 44 women, 87 of whom were Caucasian. Seventy-five had been treated previously with other medications. Diagnoses included papular acne, pustular, in 55 patients; cystic, in 13; residual scarring, nine; comedone, seven; hormonal, one; premenstrual, cystic, two; comedonicus, two; and folliculitis, one. Acne was associated with seborrhea in 36, with folliculitis in six, tinea corpora in one, pityriasis rosea in one, alopecia areata in one, and perleche in one.

Results

Results of this treatment are presented in Table 1. There was a substantial accumulative action on the affected skin of the antiseptics chlorothymol and benzalkonium chloride, and there was a more rapid healing of the external lesions when both the antiseptic pad and cream were used. This therapeutic regimen must be followed closely by the patient to insure the maximum results. After the active lesions had retrogressed, it was deemed advisable that the patient continue solely with the antiseptic pad.

Summary

A series of 90 patients, 46 men and 44 women, with various types of acne vulgaris, was treated with a new acne cream formulation containing aluminum chlorhydroxy allantoinate. Of this group, 24 patients (26 per

TABLE 1

RESULTS OF TREATMENT WITH *ENCARE*

ACNE-TYPE	No. OF PATIENTS	RESULTS			
		EXCELLENT	GOOD	FAIR	POOR
Papular, pustular	55	21	25	7	2
Papular, pustular, cystic	13	0	5	4	4
Papular, pustular, residual scarring	9	1	6	2	0
Papular, pustular, comedone	7	1	5	0	1
Hormonal	1	0	1	0	0
Premenstrual, cystic	2	0	1	1	0
Comedone acne	2	1	0	1	0
Folliculitis	1	0	1	0	0
TOTALS	90	24	44	15	7
PER CENT		26.7	48.8	16.7	7.8

cent) demonstrated excellent results, 44 (48.8 per cent) good results, and 15 (16.7 per cent) fair results. In seven (7.8 per cent) results were unsatisfactory.

There was no evidence of dermotoxicity. The cream possesses patient acceptance and is easy to use. The addition of aluminum chlorhydroxy allantoinate gives the cream a mild keratolytic and antimicrobial action favoring the reduction of the topical acne lesions. The combined usage of the antiseptic pad and the acne formulation demonstrates an increased effectiveness of this combined method.

The use of allantoin acetyl methioninate, a new chemical complex, is now being evaluated as an accelerated healing agent in acne vulgaris and seborrhea capitis.◀

Evaluation of Prednisolone Tertiary-Butylacetate with Propoxycaine in Treatment of Orthopedic Disorders

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Boston, Massachusetts

►*A new form of hydrocortisone was effective in relieving symptoms of epicondylitis, bursitis, and osteoarthritis in 91 of 106 patients treated. Usual dosage was 20 mg. in 1 cc. of solution every seven days. No side effects were noted in this series of patients. Propoxycaine gave good relief of pain.*◄

Any steroid treatment for such orthopedic disorders as osteoarthritis, bursitis, and epicondylitis must be effective locally, cause a minimum of side effects, and be capable of being administered in many areas of the body. We have found that prednisolone tertiary - butylacetate* combined with propoxycaine HCl† meets these criteria.

Of 106 patients in this series, 30 had epicondylitis, 37 had bursitis, and 39 had osteoarthritis. The dosage employed was 20 mg. of Hydeltra-T.B.A. in 1 cc. of suspension locally injected every seven days. In addition, each of the 30 patients with epicondylitis was routinely given 1 grain of codeine to control pain after the effects of propoxycaine had worn off. Five had three or more injections, eight had two injections, and 17 had one injection. Results were excellent in 26 (87 per cent), fair in two, and poor in two.

Subdeltoid bursitis with calcification was treated locally in 32 patients. Results were excellent in 26, good in three, fair in one, and poor in two. Results were excellent in all five patients with greater trochanteric bursitis with calcification.

Direct injection of 39 painful osteoarthritic joints with the ster-

**Hydeltra-T.B.A.®*, Merck Sharp & Dohme, Philadelphia, Pennsylvania. This is composed of 2% prednisolone tertiary-butylacetate, 0.9% benzyl alcohol, 0.1% sodium citrate, 0.1% polysorbate, 45% sorbitol, and water for injection sufficient to make 100%.
†*Blockain®*, George A. Breon & Co., New York, New York.

oid was evaluated according to onset, extent, and duration of the relief of pain, swelling, and stiffness. There were 12 excellent responses in 20 knee, four in ankle, five (of eight) wrist, and four (of five) shoulder joints. In a majority of these, four or more injections were necessary before satisfactory results were obtained.

Comments

Comparison studies have shown that this combination in doses of 20 to 30 mg. offers 10 per cent longer relief than 37.5 mg. of hydrocortisone tertiary-butylacetate (Hydrocortone-T.B.A.) and 60 per cent longer relief than hydrocortisone (Hydrocortone).[1]

Reports on this form of therapy for cervical, dorsal, lumbar, and sacroiliac spondylolysis have indicated that an increase in mobility of the spine, a relief of pain and tenderness, and an absence of nerve root irritation occurs in 96 per cent of the cases treated.[2] Dosage employed in 24 patients with these conditions was 20 mg. in 1 cc. of suspension locally injected every seven days for from one to six months.

Fibrositis, defined as a nonarticular rheumatic disease, is characterized by aching pain and stiffness. Infiltration of 1 to 3 cc. of the combination into the most painful areas has resulted in relief of pain lasting five to 14 days.[3]

Injection of hydrocortisone acetate and prednisolone tertiary-butylacetate into over 50,000 joints affected by rheumatoid arthritis or osteoarthritis gave good results.[4] The only complication was infection in three cases.

Relief of pain associated with subacromial bursitis has followed repeated injections of the drug into the subacromial bursa and restoration of complete mobility of the shoulder joint in 24 hours.[5]

These and other studies indicate that the combination of prednisolone tertiary - butylacetate and propoxycaine is effective in the treatment of orthopedic diseases, and that side effects with this form of therapy are minimal.

Summary

Of 106 patients with epicondylitis, bursitis, or osteoarthritis, 91 had excellent relief of symptoms following one or more injections of prednisolone tertiary-butylacetate and administration of propoxycaine. No side effects were noted.◀

1. Steingard, P. M., *J. Am. Osteopathic A.*, 58:148,1958.
2. Ramos, J. M., *Med. Times*, 86:436,1960.
3. Smith, R. T., *J. Am. Geriatrics Soc.*, 6:147, 1958.
4. Rawls, W. B., & Evans, W. L., *J.M.A. Georgia*, 47:101,1958.
5. Ramos, J. M., *Rhode Island M.J.*, 42:649, 1959.

Hydroxyzine as a Component of Anti-Asthmatic Treatment

I. A. FOND, M.D.,* *Chicago, Illinois*

►*In its ability to tranquilize asthmatic patients and to control the side effects of ephedrine-theophylline, hydroxyzine was more effective than tranquilizers or sedatives of the phenothiazine, meprobamate, or barbiturate groups. Nervousness, nausea, and dizziness were alleviated by the medication.*◄

Consideration of any one phase of treatment of asthma may be properly undertaken only against the larger perspective of total management. Though drugs are of paramount value in the prophylaxis and symptomatic control of asthma, logical management requires measures to remove or immunize against offending allergens and to avoid respiratory infection. Treatment of the patient rather than the disease likewise requires counseling in the relationships between emotions and asthmatic attacks, this based on sympathetic understanding of the patient's psychologic milieu.

Ephedrine, widely used in the relief of asthmatic symptoms, is generally given in combination with theophylline or aminophylline. To overcome the stimulatory effects of ephedrine (nervousness, nausea, and dizziness), phenobarbital, secobarbital, or pentobarbital are frequently added. But because asthmatics require these combinations more or less constantly, many physicians have raised questions regarding hazards of barbiturate habituation. It was inevitable, therefore, that the search for barbiturate substitutes would lead to use of tranquilizers.

The question then became that of discovering which ataractic would best control side effects of ephedrine, not produce side effects of its own, provide needed tranquilizing action, and be safe for long term use in asthmatics. The study undertaken and re-

*Chief of Allergy, VA Administration West Side Hospital.

ported here is designed to answer these questions.

Materials and Procedures

Twenty-two asthmatic patients receiving treatment at a Veterans Administration outpatient clinic as part of a total program of asthmatic management were given a tablet containing 130 mg. of theophylline and 24 mg. of ephedrine hydrochloride for relief of symptoms and as prophylaxis. Dosages were adjusted according to the severity of the complaints and the patients' individual toleration. In general, one tablet two, three, or four times daily was used. The length of the period of therapy ranged from six to 10 weeks.

A comparative study was made to determine which of several tranquilizers and which of several barbiturates could most effectively control nervousness, nausea, and dizziness resulting from ephedrine; and provide the most effective tranquilization or sedation as an adjunct to the ephedrine-theophylline.

The tranquilizers tested were of the phenothiazine group, thiopropazate in 5 mg. and 10 mg.; of the glycerol derivative or meprobamate group, oxanamide 40 mg. The barbiturates were phenobarbital ¼ grain, or butabarbital ¼ grain.

Where each patient was receiving the theophylline 130 mg.-ephedrine 24 mg. tablet, one of the tranquilizers or barbiturates was given for two weeks to determine its effectiveness in controling side effects and as a tranquilizer or sedative. Then, in place of either the tranquilizer or barbiturate, hydroxyzine† 10 mg. was given for a two-week period. In this way results with hydroxyzine-ephedrine-theophylline could be compared with results with another tranquilizer-ephedrine-theophylline, or with a barbiturate-ephedrine-theophylline.

A total of 348 comparative observations were made. Hydroxyzine-ephedrine-theophylline was compared with thiopropazate (5 mg.)-ephedrine-theophylline 21 times, for a series of 42 observations in each of the following categories of side effects: nervousness, nausea, and dizziness (a total of 126 observations); with the oxanamide combination 15 times in each category, for a total of 90 comparative observations; with the phenobarbital combination 14 times in each category, for a total of 84 comparative observations; with the butabarbital combination four times or 24 observations; and with the thiopropazate (10 mg.) combination four times or 24 observations.

†*Atarax*®, J. B. Roerig and Company, Div. of Chas. Pfizer & Co., Inc., New York, New York.

With all tested combinations, the specific side effects or lack of side effects measured against these same vectors as seen with the hydroxyzine combination were nervousness, nausea, and dizziness.

Though all observations were directed toward the effectiveness of the degree of control of side effects, it was assumed that the absence or presence of these was a measure also of the effectiveness of the tranquilizer or barbiturate. If the patient could enjoy relief from asthmatic symptoms as a result of the ephedrine-theophylline, and could, at the same time, not be nervous, nauseated, or dizzy from these drugs, it was hypothetized that he was adequately tranquilized or sedated by the tranquilizer or barbiturate.

In each category of side effects observed, these criteria were used: No side effects; slight side effects, seen intermittently but not interfering with the normal life pattern or necessitating discontinuance of the drug combination; moderate, experienced in a recurring pattern and occasionally incapacitating; severe, experienced more or less continuously, enough to negate the value of the therapy, and to prompt the patient to ask for another form of relief; and undetermined.

Results

In a total of 116 observations in 22 patients, 48 (83 per cent) of the observations in patients receiving hydroxyzine revealed no nervousness; eight, slight; and one, severe. With other drugs, 22 (36 per cent) of the observations showed no nervousness; 25, slight; six, moderate; four, severe; and one, undetermined.

Also in a total of 116 observations, 44 (76 per cent) of the observations in patients receiving hydroxyzine showed no nausea; six, slight; two, moderate; three, severe; and three, undetermined. With other drugs, 24 (41 per cent) revealed no nausea; 31, slight; and three, moderate.

In a further 116 observations, 47 (81 per cent) of the observations in patients receiving hydroxyzine indicated no dizziness; eight, slight; and three, moderate. With other drugs, 31 (53 per cent) revealed no dizziness and 27, slight.

By comparing these favorable results obtained with hydroxyzine with those obtained with either the phenothiazine or meprobamate type of tranquilizer, or with one of the barbiturates, it is apparent that results were only about one-half as good with the other compounds. Hydroxyzine was about twice as effective in tranquilizing these asthmatics and reducing the side effects

of ephedrine-theophylline as the other tranquilizers and barbiturates tested.

Outside the scope of the study being reported here, the writer has since been using with satisfactory results a prepared combination product‡ of hydroxyzine 10 mg., ephedrine 25 mg., and theophylline 130 mg. In those cases in which adequate control is not obtained, supplementary doses of hydroxyzine alone are given, in amounts and at intervals determined by the needs of the individual.

‡*Marax®*, J. B. Roerig and Company, Div. Chas. Pfizer & Co., Inc., New York, New York.

Conclusion

In its ability to tranquilize asthmatic patients and to control the side effects of ephedrine, hydroxyzine has shown itself more effective than tranquilizers of the phenothiazine or meprobamate group tested, or than the barbiturates. Hydroxyzine is a valuable component of anti-asthmatic treatment and may usefully be combined with ephedrine-theophylline as part of a total program for treating asthmatic patients.

Dexamethasone in Ocular Disease

This drug, administered orally in 6 patients having a variety of inflammatory intraocular disorders responsive to corticosteroids, appears to represent a major therapeutic advance in the treatment of these disorders. It was given in relatively high initial dosage (usually 1.5 to 3.0 daily but as high as 4.5 mg. in some), discontinued as soon as possible in acute disorders, gradually decreased to maintenance levels in chronic ones, and increased immediately at first sign of flare-up. It showed the highest milligram-for-milligram activity of any steroid studied to date, effective dosages being about 1/10 those of prednisone, prednisolone, methylprednisolone or triamcinolone, about 1/30 those of cortisone. Like all steroids, dexamethasone was no more effective than prior steroids in some patients but produced dramatic improvement in others. The only side effects noted in this series were edema in varying degrees and acne (in 4 cases).

Results of treatment with topical forms of dexamethasone in a large group of patients with various extraocular disorders were similar to those obtained with prednisone or prednisolone.

Gordon, H. M., *Am. J. Ophth.*, 48:656-660, 1959.

Eczema Treatment

M. MURRAY NIERMAN, M.D., *Calumet City, Illinois*

►*Chronic, dry eczemas are best treated with wet dressings and hydrocortisone emollient-base ointments. Lubrication of the inflamed tissue is necessary to relieve and dispel the irritation and itching of the dry eczematous areas. A hydrocortisone ointment gave very satisfactory results in a variety of eczemas.*◄

Eczema occurs in 20 to 40 per cent of all dermatologic cases. From a practical point of view, there is no sharp demarcation line distinguishing the various dermatoses classed as eczemas. The choice of medicaments varies considerably, but little doubt remains that the topical steroids are the greatest contribution toward relief of pruritus and inflammation of eczemas.

Methods of Treatment

Most dermatologists will first treat the acute inflammatory stage, characterized by erythema, vesiculation, or exudate, with wet dressings (e.g., Domeboro or Soyboro). After the oozing has been dried, hydrocortisone lotions, creams, and ointments are most often indicated.

Lotions and creams, appearing more elegant, are often preferred by patients. Lotions are particularly valuable in crural areas. However, these hydrophilic bases retain less water on the skin than the oleaginous ointments. In chronic eczemas, characterized by dryness and thickening with a minimum of erythema, there is a necessity for lubrication of the skin. Emollient or greasy bases are preferred over the usual water-base creams in patients with dry chronic eczemas.

Ointments afford lubrication after the acute stage of the dermatitis has subsided. The ointment base occludes the surface of the skin, reducing the loss of water. This lubrication often prevents or minimizes the rough, chapped appearance of the skin usually seen after inflammatory processes.

An ointment,* containing one per cent micronized hydrocorti-

**Domolene-HC®*, Dome Chemicals Inc., New York.

TABLE 1

ECZEMA IN 124 PATIENTS TREATED WITH *DOMOLENE-HC*

DIAGNOSIS	NUMBER OF CASES	RESULTS*			
		A	B	C	D
Eczematoid dermatitis	40	12	18	10	
Contact dermatitis	47	22	23	2	
Atopic dermatitis	16	8	8		
Infantile eczema	2	1	1		
Stasis dermatitis	16	5	9	1	1
Seborrheic dermatitis	3	2	1		
TOTAL	124	50	60	13	1

*A=Complete resolution of disease in a few days at the site applied; B=almost complete resolution in a few days with only minimal inflammation present; C=definite subsidence of inflammatory disease with some degree of inflammation still present; D=minimal improvement.

sone in a special bland emollient greasy base, has proved highly satisfactory in the management of a wide group of eczemas. The preparation inhibits water loss from the keratin layer of the skin while hydration from the underlying tissues permeates and softens the dry scales. A surface-active ingredient is incorporated into the fatty base to facilitate penetration of the hydrocortisone, help in the spreading of the ointment, and aid in subsequent easy removal with water.

Results

The 124 patients treated were instructed to use the ointment twice daily and return weekly. The results are tabulated in Table 1. All patients were relieved of the pruritus and inflammation, since practically all eczemas are relieved to varied degrees by hydrocortisone.

Most successful treatment was achieved in dermatitis venenata, or acute contact dermatitis. Over 90 per cent of the cases were cleared, usually in less than a week, on a combination of topical Domolene-HC and systemic corticosteroid therapy.

Chronic eczematoid dermatitis often starts as a contact dermatitis, either of the primary irritant or sensitization type. Prolonged exposure and neglect results in the irreversible inflammatory changes grouped as eczematoid dermatitis. Most lesions were on the palms and backs of hands. Over 75 per cent of the general eczema cases were very satisfactorily cleared. Excellent

results were achieved in half the atopic dermatitis cases. The remaining half reported definite subsidence with still some inflammation. Two cases of infantile eczema were promptly cleared. The most difficult cases were those with stasis dermatitis, since the basic etiology is peripheral venous disease resulting in tissue edema. While all patients reported relief from the pruritus and acute inflammation, only one-third of the results could be classified as satisfactory. Seborrheic dermatitis results were good to excellent in three cases.◀

Electric Stimulation: Indications

The prime use is to retard the deterioration of denervated muscle. A second use is in re-education of muscles with an intact lower motor neuron, the disease being of the central nervous system, such as cerebral infarction. Another area of usefulness is in a muscle setting program started after prolonged immobilization, the patient seeming to have forgotten how to use the muscles. As soon as the muscle is contracted voluntarily the amount of electric stimulation should be reduced. Active participation by the patient then becomes the main form of physical therapy.

A third use is of exercise and massage, both promoting arterial, venous, and lymphatic circulation better than electrical stimulation. If active motion is contraindicated or pain and edema prohibit sufficient voluntary effort, electrically-induced contractions may be used with a program of massage and wrapping.

Other uses of electric stimulation are for prevention of postoperative venous thrombosis by calf stimulation, and as an aid to respiration in diaphragmatic paralysis by stimulation of phrenic nerve and reduction of spasticity in spinal cord injuries by prolonged intensive stimulation.

The heat generated by the electrodes may burn the skin, particularly of a patient who lacks sensation. Apart from this and danger of defective equipment producing severe shock, electric stimulation is a very safe method of treatment. Its abuse (using it as a substitute for active exercise) is widespread. The physician should be aware that it has rather limited use and order it only for the purposes indicated above.

Redford, J. B., *Northwest Med.*, 59:1142-1147, 1960.

clinical report

Hemopoietic Preparation for Pregnancy

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Springfield, Missouri

►*Hypochromic anemia in 1000 pregnant patients responded well to treatment with a preparation containing desiccated ferrous sulfate and cobalt, in all but 10 cases. Five of these responded to oral B_{12} or folic acid, while the remainder required injectible iron. No serious side effects were seen.*◄

The most common causes of hypochromic anemia in pregnancy include:

1. The fetal requirement for iron in developing blood.

2. The deficiency in iron storage in the majority of women due to the regular loss of blood at the menses.

3. The deficiency of iron storage due to inadequate or poorly balanced diets during adolescence, or to peculiar food likes and dislikes. Other factors, such as poor absorption of the dietary iron or deficiency in the hemopoietic system, are exceptional.

If the hemoglobin, red count, and hematocrit are checked in new prenatal patients, it is often surprising as to just how low the level of any of these may be. Usually such a patient has considered herself to be in good health and fit physically. Those who start with a normal level will often develop a low hemoglobin around the sixth, seventh, or eighth month.

This fact is so evident that many physicians start their prenatal patients out on iron at the same time they start them on their vitamin and mineral supplement. This is in no way harmful, even though about one in four seems to have an adequate intake from her diet plus a good iron storage, and hence the iron is not needed. It is almost impossible to obtain enough iron from an adequate vitamin and mineral supplement to meet the demand for iron during pregnancy.

Treatment

It is well established that the major need in hypochromic anemia is iron. Hemopoietic

agents as B_{12}, folic acid, liver extract, etc., are unnecessary and expensive. Therefore, the search goes endlessly on for an iron preparation that is effective, inexpensive to the point that the patient can easily take it through her entire prenatal course, and free of side effects. A compound* which nearly approaches this ideal has been used in over 1000 prenatal patients.

What appears sometimes to be a poor result of a drug may be poor cooperation upon the part of the patient. Many prenatal patients forget to take their medication or dietary supplements. This is partly because the preparation is given over several months. Some refuse to take their drugs or supplements simply because they can see no need for them. To be told that they are taking something just to keep their blood quality up does not impress them as much as to be told they are markedly anemic and must get their blood rich red for the sake of the child. Consequently, some failures are really the fault of the physician for not selling the patient upon the need of continually taking the product.

The preparation used is a combination of desiccated ferrous sulfate with cobalt disodium ethylene bisimino diacetate. This is an enteric coated tablet that is suitable in appearance and size for proper patient acceptance. The cobalt, which is in a very stable chelated form, produces a prompt increase in the circulating hemopoietic hormone, erythropoietin, and at the same time improves the utilization of iron.

Results

Of the 1000 patients, only seven refused to continue the preparation because of nausea. A higher incidence of nausea was noted earlier when plain coated tablets were being used. They are advised to take the tablet with a meal or immediately thereafter. None felt the product produced marked constipation and 54 stated that it acted as a mild laxative so they no longer needed their usual laxative. None developed any skin rashes although this has been occasionally reported with cobalt.

The big majority of the maternity patients studied came from a good middle class socioeconomically so any diet failures did not arise from economic pressures but rather from food faddism. These patients were faithful in their prenatal visits. In this study, 12.5 Gm. of hemoglobin was considered a satisfactory level. Patients were started on the iron and cobalt preparation if

*Copoietin A Ferrous®, Lloyd Brothers, Inc., Cincinnati, Ohio. Each tablet contains 100 mg. of desiccated ferrous sulfate and 110 mg. of the cobalt preparation which is 15 mg. of cobalt as Co.

hemoglobin was below 12.5 Gm.

If they were having much nausea in the first trimester, therapy was not started until the third month. Levels of 8 or 9 Gm. were occasionally seen; the average for the 1000 patients was 11.2 Gm. hemoglobin and 3,850,000 red blood count.

Hemoglobin levels of 10 or 11 Gm. were easily brought to the desired level of 12.5 Gm. in two months with three tablets daily. Levels of 8 or 9 Gm. required as long as four months during the middle and last trimester.

There were 10 patients in whom there was no response, or a drop in the hemoglobin level. Re-evaluation of these revealed that five were more than a simple iron deficiency anemia and required other factors such as B_{12} or folic acid. The other five did not respond to any other types of iron orally and required injectible iron (Chromagen). It could not be proved that these patients took their iron as directed. It was felt that three of this group were of the unreliable type.◀

Otitis Externa and Swimmer's Ear

Results in 200 consecutive cases demonstrated the therapeutic and prophylactic effectiveness of a solution formulated to avoid steroids, anesthetics, and potentially sensitizing agents but to provide a wide bactericidal and fungicidal spectrum, hygroscopic action, acid pH, and good spread and penetration. This solution (VoSol Otic) contains 3% 1,2-propanediol diacetate, 2% acetic acid, and 0.02% benzethonium chloride in propylene glycol. Predominating organisms were Pseudomonas aeruginosa and Staphylococcus aureus, a fungus (Candida albicans) being found in only 1 case.

Complete cures (usually after 4 to 6 days of therapy) were achieved in all cases by the following standard treatment:

1. The ear canal was cleared with a proteolytic enzyme ointment if necessary.

2. A cotton wick saturated in the solution was inserted into the ear canal, the patient being instructed to drop solution on this every 3 hours.

3. The wick was removed the next day, therapy with the solution being continued for a total of 8 days.

Jenkins, B. H., *J.A.M.A.*, 175:402-404,1961

Cortisone and Infection

ALVIN D. GREENBERG, M.D., and
HERBERT R. MORGAN, M.D., *Rochester, New York*

►*The two basic physiologic actions of cortisone, increasing vascular integrity and decreasing cellular metabolism, explain the effects of this steroid on infections. The amount administered and the degree of infection present when therapy is initiated influence to a great extent the results of therapy.*◄

Since the isolation of the adrenal cortical hormones and the demonstration of the dramatic effect of cortisone on rheumatoid arthritis, much research has been done in an attempt to learn the mechanism of action of this steroid. The purpose of this study is to present the accumulated knowledge and to determine if there are basic mechanisms of cortisone action which can be applied to a variety of experimental and clinical conditions with reference to cortisone's effects on the processes of infection.

The clinical effects of cortisone on various infectious diseases in experimental animals, including bacterial, viral, fungal, and protozoan infections, have been summarized as follows:

1. In acute febrile illnesses, cortisone often causes disappearance of malaise, anorexia, and other evidences of toxicity.

2. In spite of the asymptomatic and afebrile state caused by cortisone, bacteremia may develop or persist, bacterial populations in infected tissues may rise, and the infection may spread.

3. Antibody production is not affected by the doses of cortisone employed clinically.

4. Cutaneous hypersensitivity reactions usually are diminished or suppressed.

Function of Glucosteroids

The main and perhaps only function of the glucosteroids is to maintain homeostasis in the face of a stress to the body. This is accomplished in several ways, one being maintenance of circulatory competence as substantiated by the fact that in adrenalectomized animals, circulatory collapse is invariably the response to stress.

Patients with Addison's disease have an increased susceptibility to all types of stress (including infection) and due to the absence of or reduction in the amounts of adrenal cortical hormones, they respond to the stress with circulatory collapse. The circulatory collapse is caused by a decrease in plasma volume due to decreased mineral corticoid secretion, and a decrease in vascular tone due to decreased glucocorticoid secretion. Conclusive evidence of adrenal insufficiency in this disease still is lacking.

A second action of the glucosteroids is to decrease peripheral utilization of glucose. Probably this is done by blocking of the sulfhydryl group on the enzyme hexokinase, thus inhibiting the formation of glucose-6-phosphate and oxalacetic acid, without which the utilization of glucose is not possible. A third action is to cause glyconeogenesis.

Cortisone produces its effect mainly by affecting:

1. Vascular tone. This results in a marked decrease in capillary permeability and, therefore, of the inflammatory reaction to injury.

2. Exudation and necrosis. Exudation is decreased and necrosis increased in the injured area.

3. Cellular changes. The decreased number of neutrophils in the injured area seems to be secondary to the increased vascular integrity caused by cortisone and not due to an increased destruction of these cells. Cortisone has no effect on the phagocytic capacity of neutrophils.

Cortisone causes eosinopenia either by destroying circulating eosinophils or by removing them from the blood stream. Cortisone produces lymphocytopenia and there is a decreased number of macrophages found in injured areas of cortisone-treated animals. The number of circulating macrophages is not consistently affected.

Effect of Cortisone on Antibodies

Cortisone in therapeutic doses has no significant effect on the circulating antibody level, but large doses produce a marked decrease. This drug affords no protection against the action of the exotoxins of the organisms causing diphtheria, botulism, or tetanus, but has a striking effect on the lethal action of endotoxins and protects against 500 times the LD_{50} of the endotoxins of Neisseria meningitidis, Shigella dysenteriae, and E. coli when it is injected either into the chorioallantoie membrane or into the yolk sac before the administration of the endotoxin. Protection against Brucella endotoxin is obtained in animals if the cortisone

is injected before, during, or up until one hour after the injection of the toxin. Small doses of cortisone will give protection, while large doses afford no protection and are in fact detrimental.

Effects of Cortisone and Their Probable Cause

Decreased capillary permeability explains decreased exudation in injured area, decreased number of neutrophils in injured area, decreased number of lymphocytes in injured area, decreased number of macrophages in injured area, and decreased phagocytic ability of neutrophils. Decreased cellular activity explains decreased repair and healing, lymphocytopenia, decreased antibody production, and delay in recovery from blockage of the reticulo-endothelial system.

Explained are the mechanism of decreased inflammatory response in the following conditions: increased necrosis in injured area, decreased protection from endotoxin with high doses, and increased protection from endotoxin with low doses. Cortisone acts at a cellular level to decrease cellular activity and thus decreases the secretion of the various inflammation-producing substances.

A small dose of cortisone given early in or before the infection would decrease local cellular destruction of fibroblasts and mast cells; these cells then would be able to stem the injurious agent before it caused great destruction. If a large dose of cortisone were given, this would tend to slow the action of the local defense cells and the injurious agent would continue to fluorish, causing more cellular destruction. The high dose of cortisone would prevent the increased capillary permeability and stickiness needed to initiate an inflammatory response, and the infection would continue unrestricted. Even a small dose of cortisone, if given too long after the infection has started, after all the local defense cells are destroyed, would serve only to decrease capillary permeability and stickiness and also the inflammatory response, the only measure left by which the body can defend itself and destroy the injurious agent.◀

New York J. Med., 61:455-465,1961.

Treatment of Intractable Pain with Morphine and Tetrahydroaminacrine

V. STONE, M.B., B.S., F.R.C.S., F.R.A.C.S.,
W. MOON, M.B., B.S., and
F. H. SHAW, PH.D., M.SC., *Melbourne, Australia*

►*The intractable pain of carcinoma was relieved in 60 patients with a combination of morphine and a partial antagonist, tetrahydroaminacrine (THA). Patients did not become addicted, and although tolerance still developed, the dose of morphine could be reduced or stopped without withdrawal symptoms.*◄

One of the disadvantageous side effects of morphine may be depression of the central nervous system (narcosis). A group of substances was discovered in 1952 which completely restored to consciousness dogs narcotized with morphine. Some of these substances were also powerful respiratory stimulants. Such substances did not, however, interfere with the analgesic action of morphine.

Tetrahydroaminacrine (THA), a respiratory stimulant, has been used for two years in arousing patients after the administration of a barbiturate or general anesthetic. It is stable in solution and has the advantage that it can be supplied in the same ampoule with morphine. Chiefly used in anesthesia, a few cases of myasthenia gravis have also been treated with THA. In this study it was used in conjunction with morphine to relieve intractable pain in 60 patients with carcinoma.

Method

The patient is given the usual therapeutic dose of morphine, 10 mg. (1/6 grain), with THA, 10-15 mg., and if he is not completely relieved of pain for six hours the dose of morphine is increased at each injection until this ideal is attained. The increments are usually morphine 15 mg. (¼ grain), 20 mg. (⅓ grain), and 30 mg. (½ grain); but a dose of 10-20 mg. is usually sufficient in the first instance. Each injection of morphine is accompanied by

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*Combes, F. C.: Ind. Med. & Surg. 30:29-34 (Jan.) 1961

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References: (1) Sulzberger, M. B.; Wolf, J.; Witten, V. H., and Kopf, A. W.: Dermatology: Diagnosis and Treatment, ed. 2, Chicago, The Year Book Publishers, Inc., 1961, pp. 44-45. (2) Combes, F. C.: New York Physician & Am. Med. 33:3, 1949.

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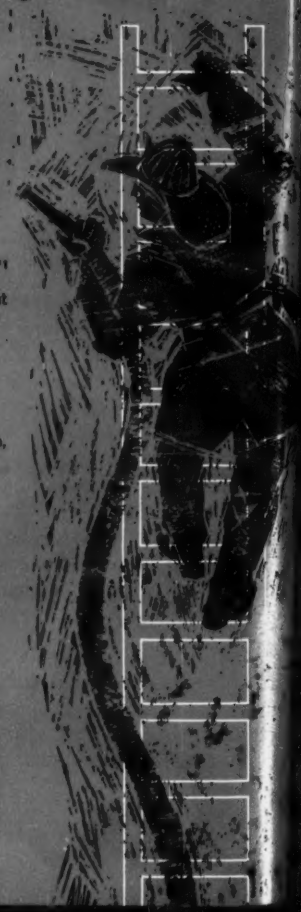


THA, either separately or, more conveniently, in the same syringe from the same ampoule of mixed morphine and THA. Usually 10-15 mg. of THA keeps the patient alert, but up to 30 mg. may be required. As it is easier to prevent the onset of pain than to relieve it, injections should be given four times a day.

If the mixture has to be used continually, the dose of morphine must be increased at monthly intervals—this probably due as much to more severe pain as to tolerance. The maximum reached in this study after one year was 150-200 mg. (2-3 grains) four times daily. It is seldom necessary to increase the dose of THA. Sensitivity to morphine is rare, but if it shows it will be observed before large doses are given. One of the great advantages of THA is that if palliative treatment lessens the pain it is possible to reduce the morphine without the appearance of withdrawal symptoms. Although the administration of morphine has been stopped suddenly without ill effect, it is advisable to reduce it over a period of 48 hours. Care should be exercised in treating elderly people since morphine alone will often cause mental disturbances. In such cases, dihydrohydroxy-codernone (Proladone) has been found satisfactory.

Side Effects

Vomiting occurs in only about 1 per cent of cases and may be treated with cyclizine (Marzine), 50 mg. either orally or parenterally. More recently trifluoperazine (Stelazine), 5 mg., and flupromazine (Vesprin), 5 mg., have been used successfully.

If a sedative is necessary, chloral or a barbiturate usually suffices. As death approaches, THA may be discontinued if the patient is distressed by insight into his condition.

The success of THA and morphine complements that produced by morphine and amiphenazole, as there are now two partial antagonists available, and in a few cases only one of these was suitable for the particular patient. THA has the following advantages over amiphenazole:

1. It is a more reliable antinarcotic agent and respiratory stimulant.

2. It does not interfere with sleep, as may amiphenazole.

3. It is chemically stable and can be prepared in the same ampoule as morphine.

4. In some instances the analgesic action of morphine is increased—this follows from its anticholinesterase activity. In other ways THA and amiphenazole appear to have the same effects: the constipation induced by morphine is lessened, pin-

point pupils are not observed, and the patient's vision is undisturbed; he can cough voluntarily, and there is no euphoria —although even without THA or amiphenazole euphoria is rare.

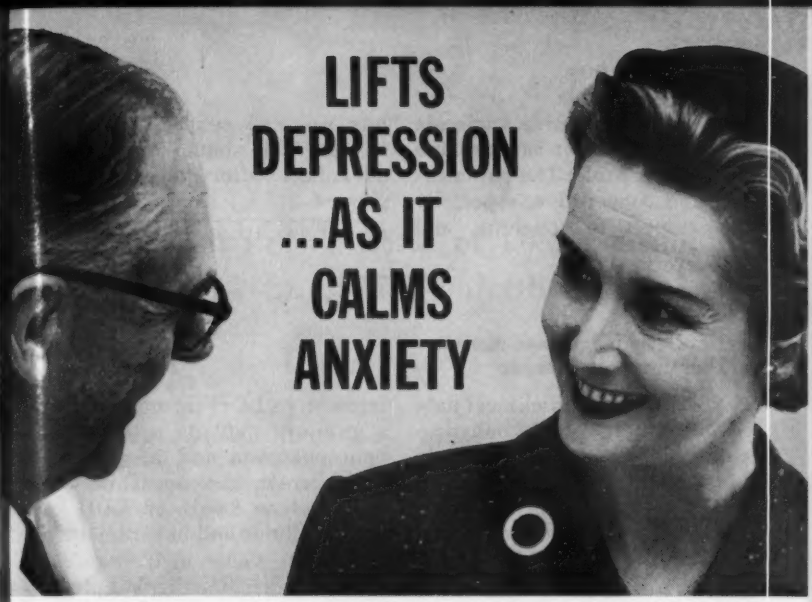
In this series when morphine was combined with THA the patients did not experience euphoria, they did not crave for their injections, it was possible to reduce or withdraw the morphine without withdrawal symptoms, and though increasingly large doses were given it was never felt that "control" of the patients was lost. The continued presence of pain was checked from time to time by withholding morphine and substituting a placebo. Similarly, it was possible to check whether complaints of pain were genuine by giving either an injection of distilled water or a single injection of double the usual dose of morphine (with THA).

Some patients are idiosyncratic to morphine, and in such cases heroin (with THA) has been found useful; in three cases heroin relieved pain more effectively than morphine and at a lower dosage. One patient was relieved by pethidine and even morphine-aspirin mixture by mouth. The small number who did not respond had to be treated empirically.

Home Treatment

The combination of morphine and THA offers another advantage in the treatment of pain in carcinoma in that it can be used for patients being treated at home. It has usually been considered inadvisable for a nonqualified person to administer morphine by injection, but most diabetics give their own insulin, and there have been many cases where a competent member of the family has looked after a relative suffering from cancer, including the administration of morphine by injection. Morphine made up with THA in the same ampoule is useless to the addict as it will not produce euphoria and cannot produce addiction. Finally, accidental or intentional poisoning is impossible if only limited amounts of the mixed drugs are issued. No danger in the domestic use of morphine thus dispensed was seen, and experience with home treatment shows that it is quite feasible. In view of these observations it seems that the use of surgical measures such as cordotomy for the relief of pain should be reconsidered. While elaborate surgical procedures may in some cases be of value, they may also fail; in such cases resort can be had to pharmacologic techniques.

Morphine and THA may be



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used for postoperative analgesia in the same manner as morphine and amiphenazole. The patient is alert and cooperative, especially with respect to coughing, and has normal respiratory exchange. This should be of great advantage after thoracic surgery.◀

Brit. M.J., 1:471-473,1961.

Lactic Dehydrogenase Activity in Diagnosis of Cancer

Experimental and clinical data indicate that lactic dehydrogenase determinations of body fluids are of value in the diagnosis of cancer involving body cavities. Lactic dehydrogenase, or LDH, is an enzyme concerned with the interconversion of pyruvate and lactate in the presence of diphosphopyridine nucleotide. It is present in most human tissues, as well as in body fluids. As an intracellular enzyme, it is liberated by tissue necrosis. Unlike benign cells, malignant cells elaborate large amounts of LDH in the absence of necrosis.

The value of such determinations in the diagnosis of cancer was investigated by studying levels of the enzyme in serum, pleural effusion, peritoneal effusion, and cerebrospinal fluid. Sediments of the effusion fluids were examined histologically for tumor cells and final diagnoses were confirmed by the clinical, laboratory, and/or surgical and postmortem records.

There were no significant differences in LDH serum levels in a group of patients with malignant neoplasia and in a group with benign disease. However, comparative levels of LDH in effusion fluids and in serum were of definite value in distinguishing benign from malignant pleural and peritoneal transudates. Benign transudates had lower levels of enzyme than those in the serum, while in most of the transudates associated with cancer the levels were higher than those in the blood serum. High levels of LDH were encountered in tuberculosis and in purulent pleural exudates without associated cancer, indicating little value of LDH determinations in the presence of infection. Spinal fluid LDH determinations were helpful in confirming the presence of central nervous system metastases in all but one patient with bronchogenic carcinoma. Spinal fluid LDH was also elevated in one patient with a recent cerebral infarction.

Bemis, E. L., *Wisconsin M.J.*, 59:549-552,1960.

Extent and Permanence of Denervation Produced by Lumbar Sympathectomy

J. A. GILLESPIE, M.D., *London, England*

►*Recovery of sympathetic sudomotor innervation following lumbar sympathectomy on audomotor activity in the lower limb occurs in most patients within a few weeks or months after operation. The practical implication is that nothing is gained by removing the lower thoracic and upper lumbar ganglia.*◄

A quantitative investigation was conducted into the early and late effects of lumbar sympathectomy on sudomotor activity, thermoregulatory sweating being a most sensitive index of recovery of sympathetic function. In 77 patients, there were 98 sympathectomized and 56 nonsympathectomized lower limbs. The latter, in patients with a unilateral sympathectomy, formed a control group. The early changes resulting from operation were investigated in a number of patients by tests carried out at intervals up to one year after operation. The long-term effects were investigated in 75 patients by tests carried out between one and seven years after operation.

Followup Results

Although the second and lower lumbar ganglia, if not the first, had been removed in all patients, the resulting areas of persisting sudomotor denervation in the 98 limbs, when tested between one and seven years after operation, indicated an apparently lower level of sympathectomy in all. The line separating normally sweating form denervated skin lay, in the majority of the limbs, at one or other of three main levels, thus indicating three principal patterns or areas of persisting denervation, partial or complete, best seen on the anterior aspect of the limb. In pattern one (17.5 per cent of the limbs) the upper limit of denervation anteriorly was marked by a transverse or oblique line lying somewhere in the lower third of the thigh. In only four patients, in-

cluded in this group, did the upper limit of denervation lie above the lower third of the thigh. In pattern two (48 per cent) the line lay transversely at the level of the knee joint. In pattern three (27.5 per cent) the upper limit of denervation was marked by a line passing from the lateral aspect of the knee down the subcutaneous border of the tibia to the region of the medial malleolus. In addition to these three main patterns of denervation, exhibited by 91 per cent of the limbs, five limbs showed a pattern of denervation between one and two, one was denervated only to the level of the ankle anteriorly, and one sweated so profusely all over that no area of denervation could be plotted.

The pattern three area of denervation corresponds only to a denervation of the fourth lumbar dermatome and below, pattern two to a denervation of the third lumbar dermatome and below, and pattern one to a denervation of the second lumbar dermatome and below. In only four of the 98 limbs did the area of denervation encroach on the first lumbar dermatome.

Conclusions

It is concluded that even though the first lumbar ganglion is removed, the first one, two, or three lumbar dermatomes later recover sweating. The area of denervation produced corresponds well to the segmental level of sympathectomy only in the early postoperative period. Recovery of sweating in these lower thoracic and upper lumbar dermatomes is not immediate, there being a variable delay. Recovery is often as complete as it will be by eight weeks, and there is never any marked change between the test at about five months and a later test at one year. Recovery, which apparently goes so far and then stops, seems to take place dermatome by dermatome from above downwards. A "high" sympathectomy may produce a smaller final area of denervation than a lower one. Within the areas of recovery, sweating appeared to be normal as judged by skin-conductivity measurements. The lumbar sudomotor dermatomes appear to correspond fairly well in position with the sensory dermatomes.

In 26 lower limbs sympathectomized between one and seven years previously for non-obliterative disease, blood-flows were measured by venous occlusion plethysmography before and after body heating, and the sudomotor test was carried out. The results showed that some sudomotor activity may be present even if vasomotor activity is not demonstrable. Slight sudomotor

activity was present in 12 limbs in which vasomotor activity apparently was not, while the reverse occurred in only two limbs. This illustrates the greater sensitivity of the skin-conductivity test in detecting the presence of minimal sympathetic activity postoperatively.

Summary

The effects of lumbar sympathectomy on audomotor activity in the lower limb were investigated in a quantitative manner in 77 patients. Complete recovery of sympathetic sudomotor innervation is the rule in the last thoracic and first lumbar dermatomes, and is common in the second and third lumbar dermatomes. This recovery is usually as complete as it will be within a few weeks or months after operation. The practical implication is that nothing is gained by removing the lower thoracic and upper lumbar ganglia at operation.

Lumbar sympathectomy, apart from the effects of accidental rerouting, produces lasting sympathetic denervation of the more distal dermatomes. The amount of sweating in response to body heating averages less than five per cent of normal in these dermatomes.

Slight recovery of sudomotor activity is more often demonstrable than recovery of vasomotor activity in sympathectomized lower limbs.◀

Brit. M.J., 1:79-83,1961.

Coronary Disease: Value of Long Term Anticoagulant Therapy

An estimated 803 per 1000 patients on continuous anticoagulant therapy remained recurrence-free after 60 months compared with 365 per 1000 remaining recurrence-free for 60 months after discontinuance of treatment. This difference was statistically significant throughout the period of observation. The recurrence rate after discontinuance was higher in those with more prolonged initial treatment, suggesting the inadvisability of stopping treatment. An estimated 736 per 1000 survived after 60 months of treatment. Exclusion of patients with diabetes and heart failure increased the 5-year survival rate to 912 per 1000. ◀

Thomes, A. B., et al., *J.A.M.A.*, 176:181-187, 1961.

Variation in Duration of Survival of Patients with Chronic Leukemias

Median survival after diagnosis for 584 patients was 11.65 months; for 16% longer than 43 months, 9% survived for 5 years. The mean duration of symptoms prior to diagnosis was 5.1 months.

The survival after diagnosis was significantly shorter for men and women over 60 with chronic myelocytic leukemia than for any other age or diagnostic group. For patients with chronic lymphocytic leukemia, survival was independent of age.

The median duration of survival for a group of patients in whom the diagnosis was made during examination for symptoms referable to some other conditions, was similar to that of those presenting with symptoms clearly referable to leukemia. Jewish women with chronic lymphocytic leukemia showed a median survival of 21.1 months, compared with 6.4 months for the non-Jewish women. Women with chronic myelocytic leukemia of type B or AB blood had median survivals after diagnosis of 24 months, compared with 10 months for the same groups with type A or O blood.

Heinleib, M., & MacMahon, B., *Blood: J. Hemat.*, 15:332-349,1960.

Anticoagulant Therapy To Prevent Coronary Thrombosis in Impending Myocardial Infarction

After the first reports of long-term anticoagulant therapy in acute coronary thrombosis, hopes were raised that continuous use of anticoagulants might prevent future attacks. This therapy implied the routine use of these drugs with efficient laboratory service, a thorough knowledge of the many drug reactions, possible expense, and difficulty of regulating the dosage to maintain proper prothrombin time under all conditions. Later reports modified the demands for routine use as opposed to selective use in the acute attack, but there still exists the notion that long-term anticoagulant therapy should be used routinely. Occlusion of the coronary arteries may result from thrombosis, intramural coronary arterial hemorrhage, severe arteriosclerosis with stenosis, syphilitic aortitis and coronary ateritis with narrowing of

the ostia, endarteritis and embolis. In some of these instances anticoagulants would be useless.

Hemorrhage derived from the intramural circulation may be an important factor in the development of arteriosclerosis, while subintimal hemorrhage may be one of the causes of coronary thrombosis.

In one illustrative case the fatal occlusive process was precipitated by hemorrhage into a mural deposit of lipid material, resulting in thrombosis of the coronary artery. In the long-term use of these preparations, there would appear to be such risk. In another case adequate control was maintained at all times, and although no complications arose during the administration and proper prolonged prothrombin times were maintained, coronary thrombosis occurred.

The failure of anticoagulant therapy to prevent myocardial infarction is illustrated in a patient having had angina pectoris for some years. All that time he had had a normal ECG, but reacted positively to a Master test. On adequate anticoagulant therapy, with controlled prothrombin time, and with diminution of pain and less need of nitroglycerin, acute myocardial infarction developed. After recovery from the infarction, a Master test was negative.

Further observations may help in determining the value of such drugs in this disease, as well as the selection of patients for this type of preventive therapy.

Condry, R. J., *West Virginia M.J.*, 55:319-322, 1959.

Growth of Premature Infants: Study of Norethandrolone

Norethandrolone (Nilevar), a synthetic steroid having an anabolic effect equal to that of testosterone propionate with only 6% of its androgenic action, was given orally for 33 to 85 days in daily dosages of 1.0 mg./kg. to 8 premature infants ranging in birth weight from 1088 to 1377 Gm. and of 2.0 mg./kg. to 5 premature infants ranging in birth weight from 923 to 1542 Gm. There was no significant influence on weight, length, serum protein, serum bilirubin, blood NPN, serum cholesterol or hemograms. Norethandrolone was discontinued as soon as the infant's weight reached 2300 Gm. No withdrawal effects were discernible. Manifestations of androgenic response or other undesirable effects were not seen. Growth rate of premature infants is normally high, for which reason it seems doubtful that it can be accelerated by the administration of any agent.

Meadows, R. W., et al., *J. Dis. Child.*, 99:206-211,1960.

Peptic Ulcer: Causes and Treatment

Peptic ulcers are usually caused by a hypersecretion of gastric juice, this being of nervous origin in duodenal ulcer patients and of hormonal or humoral origin in gastric ulcer patients. Those with duodenal ulcer secrete 3 to 20 times as much acid in the fasting empty stomach at night as do normal people. This hypersecretion is abolished by vagotomy, the ulcers usually heal, and if an adequate drainage operation has been added so that stasis of food in the antrum does not occur, they remain healed. Resection of the antrum exerts a curative effect on gastric ulcers, even those left *in situ* near the esophagus, and gastrojejunal ulcers rarely develop. Antrum resection for duodenal ulcer has been followed by a high incidence of recurrent gastrojejunal ulceration, and for this reason, more extensive resections have been customarily employed. Vagotomy alone has been found ineffective in gastric ulcer patients and, when performed for duodenal ulcer, has in many cases caused stasis in the stomach with subsequent gastric ulcer formation. Gastric vagotomy should be performed only in those ulcer patients in whom the nervous phase of gastric secretion is abnormally great. Most gastric ulcer patients put out less acid in the fasting nocturnal secretion than do normal people, and in these vagotomy should never be performed. There are some who have had a previous duodenal ulcer whose nocturnal acid output is excessive; in these vagotomy combined with antrum resection should be done.

Dragstedt, L. R., *Mississippi Valley M.J.*, 82: 115-117,1960.

Peripheral Vascular Complications in Diabetes Mellitus

Diabetics may present good pulses in the dorsalis pedis and even in the posterior tibia, with gangrene of one or more toes. Diabetic arteriosclerosis may have a predilection for end-arteries. Patients have been observed with one or two gangrenous or near-gangrenous toes having been treated by dangerous methods (soaking in hot water or applying dry heat, or elevation of the foot). Safe treatment requires that temperature be 80

to 85° F., that no direct cold or warm applications be used, and that the bed be kept level. The feasibility of Buerger's exercises or the oscillating bed is questionable. Secondary infection requires antibiotics and bedrest. If the skin is broken, tepid soaks or compresses help reduce the local infection and keep the open wound drained. The line between viable and nonviable tissue soon makes itself known, but premature amputation may lead to other amputations. If one or two toes only are involved, amputation of these digits (including the head of the metatarsal so the adjacent viable toes are approximated) is adequate. If more than two toes are involved and the posterior tibial or dorsalis pedis arterial pulse is felt, a transmetatarsal amputation is feasible. If no pulses are felt in the foot with this type of involvement, amputation of one or more toes plus a lumbar sympathectomy may be preferable. Later higher amputation may be required.

In younger diabetics a "below-the-knee" type of amputation may be adequate, but in the older ones a supracondylar amputation gives more assurance of a healed stump. Gangrene of the heel or sole with ulceration may result from pressure or direct trauma. Failure to heal requires soaks and debridement. A skin graft applied to this defect may succeed, and lumbar sympathectomy may be required.

Riddell, D. H., *J. Tennessee M.A.*, 52:347-351, 1959.

Ruptured Disc vs. Protruded Disc

Ruptured disc allows extrusion of a fragment of nucleus pulposus into the spinal canal, this fragment often migrating beyond the site of rupture. A protruded disc simply bulges within the stretched annulus and posterior longitudinal ligament. Among 100 patients operated on, 42 had a ruptured, 34 a ruptured contained, and 23 a protruded disc. One patient had no disc lesion, only a defect of the isthmus. Patients with ruptured disc (free or contained) are likely to present this picture: severe to agonizing pain, usually worse at night, aggravated by walking, standing too long, bending, lifting, straining, coughing, or sneezing. Traction or wearing a lumbosacral belt confers little or no benefit. Analgesics and heat are likewise ineffective. The number of simple disc protrusions found at operation indicates that too many patients are being operated on who would have had good results from conservative treatment.

Palazzo, F. A., *South. M.J.*, 53:55-62,1960.

Quinacrine and Chloroquine in Treatment of Petit Mal Epilepsy

Good results from either of these drugs in epilepsy were unexpected, the drugs having been given to epileptic children to rid them of intestinal parasites. This therapy was used in 13 children aged 2-14 years, with petit mal, none of whom had intestinal parasites. Epilepsy had lasted eight months in the infant, and three to eight years in the children. In the child aged 12 the disease had changed from petit to grand mal at age 11. The I.Q. was normal in 11, lower than normal in two. The EEGs were typical in 11. Treatment with anticonvulsant had failed in 10, while three had had no previous treatment. Either quinacrine or chloroquine, alone or with other anticonvulsants, was given in daily doses of 200 mg. for 10 consecutive days at a dosage of two fractions of 100 mg. each at intervals of four hours. In each case epileptic attacks ceased within two to three days and the EEGs became normal. In only a minority did the attacks appear after discontinuing the treatment, and in these few quinacrine was given once a week for several weeks. Satisfactory results have been sustained for four months to two years in all of the patients.

Vasquez, H. J., et al., *Semana med.*, 66:92-94, 1959.

Acute Poliomyelitis: Rehabilitation in 937 Cases of Chronic Sequels

Injections of 0.01 mg. somatotropic hormone into the femoral artery or intramuscularly at the level of the inguinal fold, at intervals of 8 days have a specific effect on the joint cartilage without toxic reaction in patients with chronic sequelae from poliomyelitis. Results in about one thousand such patients (aged 28 months to 35 years) for whom medical and/or surgical treatment for at least 3 months had been unsuccessful, showed that 97.9% had great improvement of rehabilitation. In 2.1% the condition remained unchanged. Specific improvement observed was in muscle tonus, temperature and thickness, longitudinal growth, recuperation of reflexes, and in improvements in muscle movements and physical capacity. The time necessary for maximal results varied from 4 to 6 months up to several years. Small muscles responded better than large. A

combination of growth hormone, trophic substances and vitamins is now being employed in such cases which may bring better results in a shorter time.

Inclan, E. H., *Rev. med. Hosp. Gen.*, 22:387-407,1959.

Radiofrequency Leukotomy for Relief of Pain

A conservative method of leukotomy has been developed which permits the least pain with minimal risk of psychologic deterioration. Successive areas of the mediofrontal white matter are coagulated by the use of implanted electrodes and employment of continuous radiofrequency alternating current of 32 to 40 watts. By pulling out the electrodes 1 to 1.5 cm. at a time, the extent of destruction can be carried upward in 3 to 4 successive stages in each hemisphere, with the aid of radiographic control. The patient is observed by surgeon and psychiatrist over several weeks before withdrawal of the electrodes. Of 19 patients with advanced cancer treated by this method, 16 obtained satisfactory relief, with striking reduction in the use of narcotics. Two patients survived only briefly. The new method is proposed for use in cases of advanced cancer too high to be treated by chordotomy, spread over too wide an area to permit cutting the posterior sensory root in the cervical cord or brain stem, or too advanced for a brain operation.

White, J. C., et al., *Arch. Neurol.*, 2:317-330, 1960.

Intellectual Functioning After Chemosurgery of Basal Ganglia in Parkinsonism

This was investigated in 66 men and 23 women, aged 31 to 69, who had chemopallidectomy and chemothalamectomy for relief of symptoms of paralysis agitans. For 71 patients scores of tests were available before and immediately after this surgery, and for 49 patients scores of tests given preoperatively and postoperatively in a followup of 4 to 14 months. The mean postoperative time before testing of the former group was 22.4 days, for the latter group 9.7 months. All the patients had unilateral lesions only. The pattern for the group is a general decline in intellectual scores immediately postoperative, and a return to the preoperative level in 9 months. There is a suggestion of slight continuing deficit in verbal functioning for the left-brain group, in the somatic aspects of intellectual performance in the right-brain group, and in motivational energy available for both hemisphere groups. Reality contact is increased.

Riklan, M., et al., *Arch. Gen. Psychiat.*, 2:22-32,1960.

Doctors and the Law

CHARLES J. FRANKEL, M.D., LL.B., *Editor*

►*Does a licensed doctor have an absolute right to membership on the staff of a hospital supported, in part, by taxes? Is a doctor, whose previous application for staff membership was denied, after a full hearing by the hospital's directors, and such denial was upheld by the courts, entitled to a full hearing on a new application for staff membership submitted shortly after the termination of the court proceedings relating to his previous application?*◄

These questions were passed on by the Illinois Appellate Court, Fourth District, in *Dayan* vs *Wood River Township Hospital*, 171 N.E.(2d) 675 (1961). The plaintiff, a licensed doctor, applied for membership on the defendant hospital's staff. The defendant's board of directors rejected the application and refused to conduct a hearing thereon.

The plaintiff contended that, since the hospital was supported in part by taxes, he, as a licensed doctor, had an absolute right to membership on its staff. The plaintiff had at one time been a staff member but, following a recommendation by the staff that his membership be discontinued, the defendant's board of directors, after an extensive hearing, refused to renew his membership. The Court said that it had upheld this action by the defendant's board, in deciding the previous suit which the plaintiff brought, because it was of the opinion then, and still was, that the mere fact that a hospital is supported in part by taxation does not give every licensed doctor an absolute right to membership on its staff; the public interest requires that there be a governing body with some discretion in the hospital staff's makeup. A hospital is not an annex to every doctor's office where the same freedom of practice that exists in the office continues. Liability might well fall on the hospital if their personnel and equipment were subjected to the control of one lacking some of the necessary professional skills. The Court also pointed out that one thing which

had influenced its earlier decision was that there were personality factors involved.

The plaintiff further contended that he had an absolute right to a full hearing on his latest application for staff membership. This application was submitted only four months after the termination of the previous court action relating to the board's refusal to renew the plaintiff's staff membership; three months later, the board rejected the application without according the plaintiff a hearing. Shortly thereafter, this action was brought. The Court said that persons devoting their time and effort to providing the public with adequate hospital services should not be subjected to such constant harassment. Accordingly, a hospital board of directors has a reasonable discretion to decide if, and when, sufficient time has passed to justify a new hearing, and to require as a condition therefor, that the new application be accompanied by some advance showing, other than the applicant's bare assertions, that the previous deficiencies no longer exist.

►*Is an action against a doctor for allegedly negligent aggravation of injuries, which the plaintiff had suffered because of another's negligence, barred by an agreement between the plaintiff and the original wrongdoer for the payment of a consent judgment against him, in monthly installments, over a long period of years?*◄

This question was before the Maryland Court of Appeals in *Trieschman* vs *Eaton*, 166 A. (2d) 892 (1961). The plaintiff who had suffered a fractured leg in an automobile accident brought an action, in 1956, against the driver whose negligence had caused the accident; in that action, a consent judgment for $10,000 was entered in 1956. Since the driver was uninsured and of limited financial resources, the plaintiff entered into an agreement with him under which the judgment was to be paid at the rate of $40 per month; the agreement stated that, upon payment in full of the judgment, the guilty driver would be "released and discharged from any further liability."

In 1957, the plaintiff brought this action for damages against the defendant doctor alleging that his malpractice in treating the fracture had prolonged her disability and caused a permanent leg defect.

The defendant doctor contended that the agreement with the guilty driver, the original wrongdoer, for the payment of the consent judgment constituted a release of the original wrongdoer and that, since the original wrongdoer could be held liable for any negligence on the doc-

tor's part, the agreement also constituted a release as to the defendant doctor. The Court said that the established rule is that both the original wrongdoer and the doctor are liable for any aggravation of the original injuries by a doctor's negligent treatment and that a release of the original wrongdoer also releases the doctor. The reasoning is that, since the original wrongdoer is liable for damages resulting from the doctor's negligent acts, and since there can be but one satisfaction for the same injury, the injured person's satisfaction by the original wrongdoer does away with all right of action against the second wrongdoer, the doctor. However, said the Court, the agreement between the plaintiff and the original wrongdoer was not a bar to an action against the defendant doctor because it was not a release as to which a presumption of satisfaction of liability might arise; it was merely a promise to release if and when all payments agreed on were made. And it is the established rule that an unsatisfied judgment, or a partially satisfied judgment, which is the present state of the plaintiff's claim against the original wrongdoer, does not discharge the liability of another responsible for the same harm. Therefore, said the Court, this action against the doctor is not barred.

►*Are Bayer Aspirin Tablets a proprietary medicine which may be sold in stores not licensed by the state pharmacy board and by employees who are not supervised by a registered pharmacist? If it is not a proprietary medicine, is the requirement that it be sold only in licensed pharmacies a valid exercise of the state's police power?*◄

These questions were before the Supreme Court, Appellate Division, Fourth Department, of New York in *Loblaw, Inc.* vs *New York State Board of Pharmacy*, 210 N.Y.S.(2d) 709 (1961). The plaintiff has, for a number of years, sold pre-packaged Bayer Aspirin Tablets in its chain of grocery supermarkets. None of the stores is registered as a pharmacy and the sale of the tablets is not supervised by a registered pharmacist.

Article 137 of the Education Law requires that drugs be sold in licensed pharmacies under the personal supervision of licensed pharmacists. The sale of proprietary medicines is excepted from this requirement. The plaintiff contended that Bayer Aspirin Tablets come within this exception. The statute does not define "proprietary medicine." Various dictionaries define a "proprietary medicine" as one which the manufacturer thereof has the exclusive right to manufacture and sell. The manufacturer of Bayer Aspirin Tablets does not, said the

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Court, have any exclusive right in aspirin, as such. The plaintiff contended that the manufacturer does have exclusive proprietary rights in the tablets known as Bayer Aspirin Tablets which arise from the facts that they are manufactured under a secret process, contain a secret and special binder, are superior in quality to other aspirin tablets, dissolve more quickly and that, through advertising, the public has been educated to rely on the manufacturer's skill and not that of the retailer. The Court said that the plaintiff has merely asserted that Bayer Aspirin Tablets are produced by a secret process and contain a secret and special binder; it presented no evidence to support these claims. Nor was any proof offered with respect to the claims that Bayer Aspirin Tablets were superior in quality and dissolved more rapidly. The Court said that the manufacturer of a drug cannot establish it as a "proprietary medicine" where its basic and essential elements are known to, and freely used by the public, simply by claiming he uses secrets in its manufacture and holds distinctive and well-known trademark. Article 137's general plan contemplates comprehensive control over all drugs with few exceptions and it would not be in harmony with the plan to permit a manufacturer of a basically common product to be excepted, while other manufacturers of the same basic product are not.

The plaintiff further contended that restricting the sale of aspirin tablets to licensed pharmacies was arbitrary and unreasonable and was, therefore, not a valid exercise of the state's police power because no benefit to the public health and welfare results from the restriction. The Court said that aspirin tablets are admittedly drugs and, as such, directly affect the health of the public. It cannot be doubted that the state can regulate and control the sale and distribution of drugs, *per se*. The plaintiff argued that placing harmful drugs and drugs that are not harmful in a single classification for purposes of regulation is arbitrary. The Court said that the legislature has determined that, in general, public health and welfare require that drugs be sold in pharmacies subject to regulation. A legislature must legislate in general terms and its enactments are not invalid if, in acting on a subject on which it has a right to act, the resulting legislation not only accomplishes its general purpose, but also prohibits some isolated transaction which, by itself, would be harmless and unobjectionable. The plaintiff also argued that the restriction was unreasonable because sales of aspirin

even when sold in pharmacies are not supervised by pharmacists. The Court said that this argument overlooks the basic fact that aspirin is a drug and thus may be regulated by general legislation under the police power.*

►*The plaintiff was hospitalized less than six months after exhausting her benefits under a hospitalization insurance policy and received no benefits for this period. Is the plaintiff entitled to benefits, when hospitalized more than six months after last receiving benefits, if the policy provides that an insured will re-qualify only when there is a lapse of six months between the last discharge from a hospital and the next admission?*◄

The Michigan Supreme Court passed on this question in *Cottrill* vs *Michigan Hospital Service,* 102 N.W.(2d) 179 (1960). The plaintiff's policy with the defendant insurer provided for a maximum benefit period of 30 days. The benefits were exhausted in October, 1956. The plaintiff was again hospitalized from February 27, 1957 to March 11, 1957; for this period she was paid no benefits. She was again hospitalized from August 13, 1957 to September 8, 1957; the defendant refused to pay the plaintiff any benefits for this period.

The policy provided that an insured would again be entitled to a maximum period of 30 days "only when there has been a lapse of at least six months between the date of last discharge from a hospital and the date of next admission." The plaintiff contended that the reference to the date of last discharge from a hospital should be construed as a period of hospitalization for which benefits were paid under the policy. The Court said that, had it been intended that the reference to the discharge meant that the prior hospitalization had to be one that entitled the insured to benefits, it may be assumed that such intent would have been indicated in appropriate language. The interpretation contended for by the plaintiff would require reading into the policy a provision not contained therein. A court may not, under the guise of interpreting a policy, reform or modify it. The plaintiff further argued that an ambiguous insurance policy must be construed against the party who wrote it. The Court agreed that this was the rule but further stated that the existence of an ambiguity is essential to its application. There was no ambiguity here; it is clear from the policy's specific language that the plaintiff is not entitled to the benefits claimed.

►*The defendant doctor treated the plaintiff from the early stages of her*

*There was judgment for the plaintiff in this case in the trial court. The trial judge's opinion was summarized in the March, 1961 issue of Clinical Medicine.

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References: 1. Ford, R. V.: Current Therap. Research 2:347, 1960. 2. Fuchs, M., and others: Current Therap. Research 2:11, 1960. 3. Ford, R. V.: Connecticut Med. 24:704-707, (Nov.) 1960. 4. Ford, R. V.: Texas State J. Med. 56:343, 1960.

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pregnancy. When complications set in during childbirth, the defendant, rather than going to the plaintiff's home, requested that she be brought to the hospital. Six hours later the plaintiff was brought to the hospital where the child was delivered dead. Was the defendant guilty of malpractice?◀

The Court of Appeal, Third Circuit, of Louisiana passed on this question in *Vidrine* vs *Mayes*, 127 So.(2d) 809 (1961). The plaintiff, who lived in a rural area, consulted the defendant, whose office was in a town about nine miles away, in June, 1958 when she was in the early stages of pregnancy and was checked by him in his office several times. When defendant checked her on December 17, 1958, he determined that childbirth could be expected within two weeks. The plaintiff then asked whether the child could be delivered at home. The defendant said this could not be done because the home lacked the facilities for safe childbirth, especially if there were complications, that were available at the hospital in the town where he had his office. Accordingly, the plaintiff arranged for an aged Negro midwife to attend the delivery. The midwife, when summoned by plaintiff about midnight on December 20, saw that the birth was going to be difficult and accompanied by complications, and immediately advised that a doctor be secured. Three doctors were called, one of whom was the defendant; all advised that plaintiff should be brought to the hospital where necessary surgical and medical facilities were available. The plaintiff was not brought to the hospital until six hours later. The child was already dead and the plaintiff's life was saved only by the defendant's medical intervention.

The plaintiff contended that the defendant was liable for the baby's death on the ground that a doctor who undertakes a treatment is, in the absence of an agreement limiting his service, under a duty to continue treatment so long as the case requires attention. The Court said that a doctor is not required to accept professional employment on his patient's terms but may limit his obligation by undertaking to treat or care for the patient only in a hospital rather than in the patient's home. Further, the evidence showed that no doctor in the area any longer undertakes childbirth in the patient's home. All require, especially in emergency conditions, that the expectant mother be brought to the hospital. In this case the complication was a hand presentation, which made necessary a version and extraction, a procedure that can be performed safely only with the facilities of

a hospital delivery room available. The defendant and two other doctors all advised that plaintiff be brought at once to the hospital, which, under the circumstances, was the safest possible procedure; they are not responsible for the delay in bringing her to the hospital. The defendant fully performed any legal, ethical or humanitarian duty to the plaintiff and is, therefore, not liable for the death of her baby.

Diseases of Female Urethra and Their Complications

The female urethra has periurethral glands with ducts opening into the lumen and these glands are subject to abnormalities, cyst formations, and infections. Congenital stenoses which may go undiagnosed until adulthood predispose to attacks of chills, fever, and all the symptoms of cystitis.

Urethritis often causes frequency, urgency, and low back pain, as well as a constant dull pain referred to the vagina, suprapubic region, or along the course of the ureters. The latter symptoms often lead to a mistake in diagnosis. Treatment consists of dilation of the urethra and emptying of the glands by massage over a sound. Application of 2 to 5% silver nitrate along the entire course of the urethra weekly gives relief of symptoms, and antibiotics and triple sulfas are also beneficial. Excess granulation tissue and protrusion of mucous membrane, with persistent pain, requires excision with the electrosurgical unit. Postmenopausal urethritis yields to dilation weekly and estrogens orally or in suppository form.

Examination of a painful urethra often discloses a small reddish-blue growth the size of a match head to that of a large bean. This caruncle can be removed, under local anesthesia, with an electric needle.

Congenital stricture of the urethra may necessitate dilation in infancy. Traumatic strictures are among the complications of delivery. All strictures require the same treatment, which consists of applying 5% hexylcaine HCl (Cyclaine) in the urethra on a cotton pledget and leaving for 5 minutes, then dilating up to a 22-24, in some cases, a 30 sound.

Niceley, P., *J.M.A. Alabama*, 29:373-376,1960.

The Doctor Builds His Estate

Prepared monthly for the readers of Clinical Medicine by the Research Department of Bache & Co., 36 Wall Street, New York 5.

►*These monthly articles point out one method by which the physician may overcome the handicap imposed upon him by taxes on the bulk of his income at normal rates, as opposed to the capital gains tax open to many business men. One solution is systematic investment of current income in securities.*◄

While, naturally enough, the average investor is interested primarily in domestic securities, appreciation opportunities certainly are not limited to the confines of the United States. In past years, when the American securities markets have had their difficulties, shares in the European markets and on the exchanges of our neighbor to the north, Canada, have done exceedingly well. The standard of living in Europe, which has lagged behind ours due to war devastation and superior U.S. technology, is slowly beginning to catch up and demand for hard and soft consumer products have been burgeoning to a state reminiscent of the mid-'50 U.S. boom.

Of course, there are some pitfalls associated with foreign investment that do not confront the investor in U.S. securities, e.g., frequent political upheavals caused by local conditions that cannot be followed readily by the far-removed American investor. Another possible danger is nationalistic sentiment that would tend to discourage investment by outsiders.

Generally, however, there exists well-established companies in friendly foreign nations who have displayed the ability to weather all their country's crises and to maintain solid records. These companies usually sell on lower price-earnings bases than their American counterparts and are thus considered reasonable purchases on a statistical basis. We have compiled a study of three of these companies, offering capital gains possibilities for

the more venturesome investor.

Massey-Ferguson

Massey-Ferguson, Canada's leading producer of farm machinery, has substantially improved its competitive position by an aggressive acquisition program and the introduction of improved techniques for internal financial control. These steps place the company in a position to generate substantially higher earnings, especially since sales volume is in a strong uptrend.

Sales of the company's diversified product line were at historic highs in the fiscal year which ended October 31, 1960, and it appears likely that last year's volume will be surpassed this year. Net income in 1960 declined despite the sustained high level of sales activity. The decline was due to the combined influences of sharply lower tax credits derived from previous losses and a 50% increase in depreciation charges. Although pressure from these sources will continue in 1961, the heaviest impact was absorbed last year and current results should begin to reflect the basic earnings potential of the company's expanded operations. First half results showed net of 45¢ per share, down from 55¢ for the similar 1960 period, due to heavy start-up expenses incurred on a new tractor line being produced in France. Despite this decline, full year earnings of $1.20 per share seem attainable compared with $0.97 in 1960. Moreover, the portion of net attributable to tax credits will decline, thereby improving the quality of the earnings. Selling at less than 11 times estimated earnings, the shares offer attractive long-term appreciation potential.

Sales volume of farm machinery in the U. S. is highly correlated to gross farm income which has shown little improvement in recent years. This has resulted in a highly competitive sales climate developing for the farm machinery industry. In addition, the trend in recent years towards increasing concentration of farm production on large farms has resulted in more intensive use of equipment while at the same time narrowing the market for new sales. As a result parts and service revenues have become an important source of earnings for companies selling in the American market.

Overseas, moreover, large new markets are opening up. Europe has emerged as a major consumer of farm equipment in recent years with sales spurred by a growing shortage of labor in many economically advanced regions. This has resulted in increasing substitution of equipment for hand labor. The universal drive for improved standards

of living in such areas as Africa, Asia, Australia and South America will require substantial mechanization of farm production to reach fulfillment. Companies which are equipped and located to meet these growing needs in new markets will benefit considerably and Massey-Ferguson enjoys a favorable position in many of them.

Massey-Ferguson is the world's third largest manufacturer of agricultural machinery. The company has 24 plants located strategically around the globe which enable it to service the expanding needs for its products which, in addition to farm machinery, include such diverse items as industrial equipment, office furnishings, outboard motors, and recreational items.

Sales volume in 1960 was composed of 45% tractors, 18% grain harvesting equipment, 12% other than farm products, 10% replacement parts and 9% Diesel engines. A geographical breakdown of revenues shows some 43% of sales derived from North America and 40% from Europe with the remainder coming from such areas as Australia, Africa, Asia, and Latin America.

Profit margins have been improving over the past five years with the exception of 1960 when a sharp increase in depreciation and amortization charges due to recent acquisitions resulted in a drop from a 5.7% to a 4.3% margin on sales. Cash flow was actually up slightly, however, from $39.3 million to $39.9 million. Profit margins, nevertheless, remain the company's most serious problem and management is now aiming its efforts more in this direction than towards increasing sales volume.

A number of recent acquisitions have improved the company's operations by providing both a more diversified product line and increased opportunities for integration of facilities. Most important of these moves was the acquisition of Perkins Motors, an English manufacturer of high-speed Diesel engines and outboard motors. Sales of the Perkins Group in 1960 were approximately $49 million and future gains are expected. Another timely move was the purchase of the tractor facilities of Standard Motors in England which provided both manufacturing facilities and an extensive sales and service organization. G. Londini & Fegli, Italy's second largest tractor producer with annual sales of $42 million, was the most recent step in the acquisition program. Finally, through a minority interest in Tractors & Farm Equipment Private, Ltd., Massey-Ferguson has entered the Indian market which appears to offer excellent long-term potential.

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Capitalization	
Long-Term Debt	$93,649,105
Preferred	$25,966,500
Common	12,098,471 shs.

Considerable progress has been made in improving the company's domestic operations. Inventories have been substantially reduced, thus improving the company's financial condition. Service facilities, which have been somewhat weak, have been upgraded, thus adding to consumer acceptance of the company's line. Sales volume should be favorably affected by this step. In order to improve control over the widespread operations of the company, a policy of centralized control has been instituted which should result in better integration of facilities and more efficient operations. From the longer-term viewpoint marketing and research facilities are receiving increasing emphasis which will enable the company to strengthen its position in the industry. Another beneficial step was the establishment of two finance subsidiaries designed to provide credit availability to the dealer network. While profits from this source appear distant, the move is indicative of management's plans.

In our opinion, the cumulative effect of all these moves will be to reduce costs and improve the efficency of the company. With these changes taking place in conjunction with an increasing sales volume arising from the company's strong position in important foreign markets, the effect on earnings could be substantial.

For 1961, per share results of about $1.20 seem likely with a smaller portion coming from tax credits than was the case in 1960. In our opinion, the improved quality of these earnings justifies a higher price-earnings multiple than has hitherto been accorded the company. Moreover, the clearly defined outlook for continued gains in sales indicates that Massey-Ferguson may be entering a period of sharply higher earnings which also should eventually be reflected in the price-earnings multiple. Selling at only 13 times last year's earnings and 11 times estimated 1961 results, the shares have not yet reflected this potential. In our opinion, the stock represents an interesting speculative commitment for long-term capital gains.

Rank Organization

Our second stock for perusal is Rank Organization. Formerly a motion picture company, the Rank Organization is now a diversified company bent on exploiting two deep-seated sociological developments that will make themselves felt increasingly in the 1960's; more leisure and more disposable income. Thus, in addition to all phases of the movie business, Rank has entered the following promising areas in recent years: radio and television manufacturing; the production, under license, of Bell & Howell amateur photograph equipment; operation of dance halls and studios; development of xerography outside the United States in association with Xerox Corp.; the processing of both still and movie amateur color film; operation of bowling alleys; the provision of television and radio relay services; and the acquisition of retailing outlets for consumer durables. Other plus factors are large holdings of valuable real estate now ripe for redevelopment, and a library of about 200 full-length feature films which could have an enhanced value if and when pay television is introduced in Britain—an eventuality for which Rank is preparing itself.

We anticipate a significant improvement in operating results this year which will be magnified by the considerable leverage factor inherent in the depreciation charges, debt interest, and preferred dividends, both to the Rank preferred shareholders and also to the preferred shareholders of subsidiaries. We look for earnings to increase, probably to around 25¢ a share for the fiscal year just ended from 1960's 15.6¢ a share on shares outstanding prior to a 1-for-5 rights issue. Assuming the gross dividend is raised from 9.5¢ a share to 15.75¢ a share, adjusted earnings (adding back 38¾% income tax withheld on dividend) will be around 31¢ a share.

In our opinion, the ordinary and "A" ordinary shares of the Rank Organization are an unusually attractive speculation for the intermediate and longer term.

The Rank Group is a complex one. Originally, it was a movie company participating in all phases of the industry—production, distribution, and exhibition. However, several years ago management realized that while the movie industry would continue to play an important role in the entertainment world, it must necessarily shrink in the face of competition from television and other contenders for the consumer's disposable income.

When the movie industry was flourishing, the British Government skimmed off the cream

with an Entertainments Admission Tax. Between 1951 and 1957, about $30 million went annually into the British Treasury from admissions to Rank Group theaters although the company was able only twice in this period to report earnings available to the ordinary Rank Organization stockholder in excess of $3 million. The merciless milking process went on until it looked as if "rigor mortis" might set in, both for Rank and the British movie industry. Relief came, but it was stingy and meanwhile admissions were continuing to plunge. In 1958, the company reported a deficit. More relief followed, and eventually in April of this year the Entertainments Admission Tax was abolished altogether. While this sorry tale was being enacted during the 1950's, the company was diversifying into other fields. Since management knew the entertainment business, it is not surprising that more often than not they chose this same area. Moreover, the sociological changes mentioned above do make this an appealing area for investment. Since Rank has busily sown in the 1950's, we look for it to reap abundant harvest in the 1960's.

The Rank Group's manufacturing interests are through two companies, Rank Precision Industries, Ltd. and Bush & Rank Cintel, Ltd., and their respective subsidiaries. As at June 25, 1960, outside equity interests in the Rank Group's manufacturing interests amounted to some 45%. This would have been reduced somewhat by the recent purchase of a substantial outside interest in Rank Precision Industries, Ltd. Originally, the largest part of Rank Precision Industries' sales were products which were consumed by the movie industry. Thus, the company has had to enter other areas to compensate for the declining movie industry. The Taylor, Taylor & Hobson division makes high-quality lenses, precision machine tools, and measuring instruments of many kinds. Another division which is doing well is the Cine & Photographic division. This division has rights on Bell & Howell cine products in all countries of the world with the exception of North and South America, Switzerland, and the Far East (other than countries which were part of the British Commonwealth in 1946). The division also has restricted rights in Canada.

The Rank Group, partially through Rank Precision Industries, has about a 50% interest in Rank-Xerox; the other half being owned by Haloid Xerox of the United States. Rank-Xerox has the marketing and manufacturing rights in the dry-electrostatic process known as xerogra-

phy throughout the world, with the exception of the United States and Canada. A number of overseas arrangements have already been made, including a joint venture to manufacture in Japan. In the latest fiscal year Rank-Xerox made its first profit, having incurred losses in previous years because of heavy development expenditures. Since this interest is carried as a trade investment and since no dividends are being paid at the present time and presumably will not be paid for some considerable time because cash will have to be retained for rapid expansion), no earnings from this source are reflected in the Rank Organization accounts. The Rank Organtion has developed the Xeronic printer, one of the first electronic printers of information which comes from computers; previously relatively slow mechanical printers were used.

Bush & Rank Cintel, Ltd.'s most important subsidiary is Bush Radio, which is one of the leaders in Britain in the field of domestic radio and television receivers. The company's products are noted for high quality, as is testified to by the fact that the Bush television receiver was placed first in a recent independent consumer survey. Sales of this company are about $28 million annually. Rank Cintel is also engaged in a wide variety of activities in the field of specialized precision machine manufacture and electronics. For example, important development work is being carried out on large screen color television; elaborate television studio equipment is being manufactured and marketed throughout the world; and a wide variety of cathode ray tubes is produced. These tubes are normally of a sophisticated nature rather than the mass-produced, low-cost consumer article.

The profits of miscellaneous activities have remained on a plateau for the past five years. In recent years those miscellaneous activities which have yielded significant profits include the operation of dance halls, dance studios, and restaurants. At the end of 1960 fiscal year the company was operating 23 dance halls which compares with 13 only two years earlier. For several years the company has operated 21 dance studios and presently has 65 restaurants (usually attached to the theaters).

It is our contention that our projected fiscal 1961 earnings performance will not be a flash in the pan, but a solid base on which to build further profit gains during the 1960's. Where will these additional earnings come from?

Some of the sources should be:

1. Bowling alleys. The first bowling alley, which opened ear-

designed
for all
gravid
patients...

particularly the multipara

Natalins® tablets

BRAND

Comprehensive vitamin-mineral support, pre- and post-natal

formerly Natalins Comprehensive

Only one Natalins tablet per day provides generous amounts of iron, calcium, and vitamin C, plus 8 other important vitamins. This special formula helps assure, in multiparas, the extra nutritional protection they—particularly*—need. It naturally follows that this formulation will be adequate for the primigravida. With their new smooth coating, Natalins tablets are easier to swallow—and they disintegrate rapidly and fully for maximum utilization.

And for basic supplementation when her diet appears adequate, Natalins® Basic tablets provide, in one tablet a day, ample amounts of the four basic vitamins and minerals needed to guard the well-being of patient and baby.

For convenience in specification, Natalins tablets and Natalins Basic tablets have replaced all other Natalins formulations.

*Traylor, J. B., and Torpin, R.: Am. J. Obst. & Gynec. 61:71-74 (Jan.) 1951.

Mead Johnson Laboratories

Symbol of service in medicine

52163

ly in 1960, has been so well received that the group intends to open another six centers in the next few months. Over the next two or three years it is hoped that some 20 bowling centers will be opened.

2. Development of relay television and radio business. This business is a growing and profitable one in Britain at the present time. Perhaps, of more importance, however, is the fact that a stake in this business may well prove to be very valuable if and when pay television is introduced to Britain.

3. Establishment of a chain of retail outlets for consumer durables. In parallel with the relay radio and television business, the Rank Group is establishing a chain of retail outlets for the renting and selling of consumer durables.

4. Additional dance halls. It has been found that dance halls are good money earners and it is planned to increase the Group's chain further in the years ahead.

5. Developing of amateur color slides. This area would appear to offer great opportunities for expansion. At present about one in twenty of the films taken by amateurs in Britain is color. This compares with an approximate 50-50 relationship in the United States.

6. Growth from Rank-Xerox. Xerox Corp. in the United States has shown a remarkable record of growth in sales and earnings in the past ten years. Benefiting from Xerox's research talents, Rank-Xerox has a bright future serving the world outside the United States and Canada.

7. Redevelopment of property. Fixed assets are shown in the consolidated balance sheet at over $185 million, and net after depreciation at over $124 million. Of the gross figures, over $148 million represents theaters, partly at cost and partly at independent valuation (or where cost is not reasonably obtainable, at net book value on June 26, 1948, less sales). It is not possible to say how much they would be worth now, but it is clear that with many of them in strategic positions they must collectively be worth considerably more than their book value. The disposal of over 100 theaters in the next five years should generate cash which will be able to be employed much more profitably. In developing these properties the Rank Group intends to associate itself with others experienced in the property field. The broad basis upon which these associations are being created is that the Rank Group sells the property at a current value for cash to a company in which it will retain a substantial equity interest. As a start, early in 1960 Rank Property Development,

Rank Organization

Price	3¾
Dividend	15.75¢
Yield	4.190
Traded	London & OTC

Capitalization

Ordinary Shares (70¢ par)	7,575,932 shs.
Ordinary "A" (70¢ par)	5,711,062 shs.
6% Cum. Pfd. Shs. ($2.80 par)	2,750,000 shs.
Minority Interest	$60,639,325
Debt	$61,281,550

Ltd. was formed as a partnership between Prudential Assurance Company, Richard Costain, Ltd., and the Rank Group in equal shares. Other associations are in the course of formation. No significant contribution to profits can be expected from this source for at least three or four years.

8. A film library of some 200 full-length feature films. This could have considerably enhanced value if and when pay television is introduced in Britain and in other parts of the world.

9. Development of amateur movie photography. Rank Precision Industries, Ltd.'s rights on Bell & Howell equipment in certain parts of the world should prove of growing importance in the years ahead.

10. The Group's increasing interest in certain sections of the rapidly growing electronics industry.

Gestetner Ltd.

Our third company is Gestetner Ltd., the originator and largest manufacturer in the world of stencil duplicating equipment. The company has over 1000 centers in over 100 countries which handle sales, servicing of the duplicating equipment, and the distribution of duplicating supplies. The company's production facilities are located at Tottenham, England. In addition to a complete line of stencil duplicators, the company offers the Gestefax, an electronic scanning device (throughout the world) and the Gestelith, an offset duplicator, through the world except in the United States.

The company's record is one of consistent progress. Per share earnings have risen from 15.7¢ in 1955 to approximately 33¢ in the fiscal year ended March 31, 1960, before easing back to 32¢ in fiscal 1961.

We are impressed by the company's steady earnings progress demonstrated over the years which, no doubt, is in part due to the stabilizing effect of the repeat orders for stencil duplicating materials.

GESTETNER LTD.

Price	5
Dividend	14¢
Yield	2.1%
Traded	London & OTC

Capitalization	
Long-Term Debt	$1,340,108
4½% Cum. Pfd. Stock	$2,100,000
Ordinary Stock (70¢ par)	1,613,668 shs.
Ordinary "A" (70¢ par)	9,165,528 shs.

Towards the end of 1959 a complete range of new models of equipment was introduced. This factor, coupled with the significant increase in exports, leads us to believe that in the future the company should be able to report substantial earnings gains. The stock is not expensive statistically, either on its own merits or more especially when compared with United States companies operating in the office equipment field. The shares appear attractive for long-term growth accounts.◀

Syphilis: Detection with Quantitative and Treponemal Tests

Successive quantitative tests can be used to judge response to antisyphilitic treatment, to detect clinical relapse (rise in titer occurs), to differentiate true prenatal syphilis from passively transferred positive blood (reagin) in the newborn, to detect serofastness, and to detect acute biologic false positive conditions.

Treponemal tests for syphilis are valuable in determining the presence of biologic false positive reactions. If this is positive, then certain other studies are in order (serum electrophoretic pattern, cephalin flocculation and thymol turbidity tests, sedimentation rate, and complete blood count). If some of these tests give positive results more careful observation, with their repetition from time to time, is indicated. If test results are all negative, yearly observation with special attention to such things as joint pains, unexplained fevers, and malaise are necessary. Treponemal tests are not usable as either a criterion of the cure of syphilis or an indication for retreatment of sero-resistant cases.

Polsky, M., *Texas J. Med.*, 57:30-35,1961.

longer-acting, fewer injections

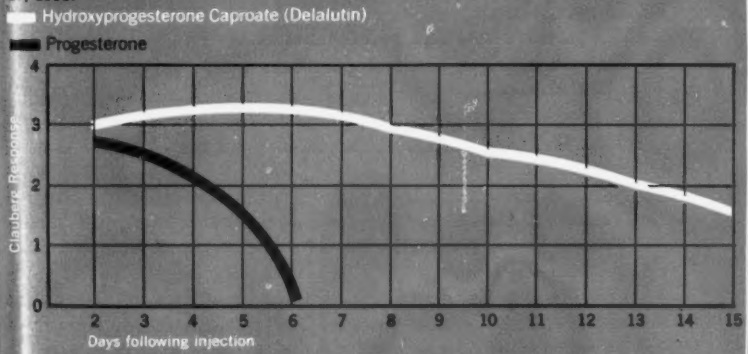
for fetal salvage with no androgenic effect

DELALUTIN

Squibb Hydroxyprogesterone Caproate — Long-acting Progestational Therapy

Delalutin offers these advantages over other progestational agents: Significantly improved rate of fetal salvage[1-3] ■ No virilizing effect on female fetus or mother ■ High, sustained hormonal level in the uterine muscle and mucosa[4] — high enough even to replace an excised corpus luteum[5] ■ Absence of local tissue reactions[3].

Comparative effect of single subcutaneous injection of Delalutin and progesterone on the progestational changes [Clauberg Test] in the rabbit uterus.
Borman, A.: Laboratory Report on the Duration of Action of 17-Alpha-Hydroxy-progesterone-n-Caproate (Delalutin). The Squibb Institute for Medical Research, May 17, 1955.



Supply: Vials of 2 and 10 cc., each cc. containing 125 mg. of hydroxyprogesterone caproate in sesame oil with 35% benzyl benzoate. Vials of 1 cc., each cc. containing 250 mg. of hydroxyprogesterone caproate in castor oil with 61% benzyl benzoate. References: 1. Boschann, H. W.: Ann. New York Acad. Sc. 71:727 (July 30) 1958. 2. Reifenstein, E. C., Jr.: Ann. New York Acad. Sc. 71:762 (July 30) 1958. 3. Castelazo Ayala, L., et al.: Gin. y Obstet. de Mexico 14:249 (May-June) 1959. 4. Plotz, E. J.: Abortion (Hemorrhage of Early Pregnancy), in Conn, H. F.: Current Therapy — 1960, Philadelphia: W. B. Saunders Co., 1960, pp. 613 ff. 5. Wright, H. L., Withers, R. W., and Ingram, J. M.: Am. Pract. & Digest Treat. 10:1344 (Sept.) 1959.

Complete information on administration and dosage is supplied in the package insert and in your Squibb Product Reference and Product Brief.

Squibb

Squibb Quality—the Priceless Ingredient

Delalutin® is a Squibb trademark

Trademarked drugs . . .

or "drugs anonymous"?

In the field of medicine, as almost everywhere else in a free economy, the trademark concept has evolved over the years. As with most human institutions, there are some who may not consider it ideal; but it has brought about three signal benefits:

To the physician it gives assurance of quality in the drugs he prescribes—assurance backed by the biggest asset of the maker, his reputation.

To the manufacturer it gives one of the greatest possible incentives to produce new and better curative agents.

To the pharmacist it gives preparations which he can dispense with confidence.

If trademarks are done away with, a whole new setup must be created:

1. An enormously expanded, expensive system of government quality control.

2. A new system of generic nomenclature which would magically turn out names not only rememberably simple, but also conforming to the principles of complex chemical terminology.

3. Something new to fill the gap left by the elimination of the trademark incentive to produce new and better drugs.

The American system has been pre-eminent in producing and distributing good medicines. Above all it has been successful in creating new advances in therapy. In a dubious effort to provide cheaper medicines by abolishing the trade names upon which the responsible makers stake their reputations, let us beware of sacrificing this success.

This message is brought to you on behalf of the producers of prescription drugs to help you answer your patients' questions on this current medical topic. For additional information, please write **Pharmaceutical Manufacturers Association,** *1411 K Street, N. W., Washington 5, D.C.*

The Doctor and His Federal Income Tax

Prepared monthly for the readers of Clinical Medicine by Sydney Prerau, Director, the J. K. Lasser Tax Institute, Larchmont, New York

►*Will your son be in the Armed Services any time this year?*◄

Regardless of age or income, if your son is at an accredited school for five months this year, he will be your dependent if you are his chief source of support. To get this dependency deduction, you must show that you contributed more than one-half towards his support. You should have records showing the amount of his total support and your contribution. If he is inducted, the armed service is contributing to his support by pay, food, clothing, medical care, etc. which it furnishes. Find out what that amounts to, what incidentals he pays for out of his pay, and keep a record of what you contribute for food, clothing, entertainment, transportation and like necessities. (Transportation may be a necessity—but a car is not). The father of a 17 year old boy who was his son's sole support until the boy enlisted in the army was not allowed to claim his son as a dependent. He could not satisfy the court that he had contributed more than one-half the boy's total support after taking into account the room, board, and pay from the Army.

►*Machine check of tax returns*◄

The day of the electronic check of tax returns is not far off. The machine check will place a greater premium on accuracy, because any error, however negligible, could mean singling out that return for audit. The first of nine Internal Revenue Service centers for automatic data processing will be in operation at Atlanta, Georgia in 1962. The system, called ADP, will be in complete operation by 1969. While the machine check will not replace the agent on audit examination, it will serve to pinpoint those returns with "significant audit characteristics." Revenue producing operations will be strengthened and enforced by

the machine this way: It will check whether all the necessary returns have been filed by a taxpayer, will mathematically check accuracy and compute tax liability. It will maintain a consolidated tax account for each taxpayer showing current tax status. It will match information returns with tax returns to see that figures reported in one are accurately reflected in the other. It will serve to permit an exchange of information on Federal returns between states which install the machine equipment.

The Commissioner of Internal Revenue predicts an increase of approximately 10% in audits starting with the new fiscal year. However, the expanded program will reach its peak when the bulk of the paper work is completed electronically. Then very few taxpayers who are required to file long-form returns will avoid audits. When the ADP system is complete, practically all such returns will be audited. To implement the program Congress has been asked for increased appropriations to further build up the agent force. Commissioner Caplin believes that mechanization of processing activities will free the Treasury from its voluminous paper work, provide better service to taxpayers, and afford a more complete check of tax law compliance.

►*Uncollectible fees are deductible to cash basis taxpayer only if reported as income*◄

If a doctor reports income on a cash basis, the Internal Revenue Code authorizes the deduction of an uncollected fee in the year it becomes worthless. But the Treasury Regulations provide that the deduction is not allowable unless the amount of such fee is reported by you as income, either in the year the deduction is taken or in a prior taxable year. This Regulation was recently challenged by an engineer who claimed it was invalid as imposing a requirement that changed the statute. He was a cash basis taxpayer. He billed a client for $1,840 and was not paid. In the year the fee became worthless, he claimed the amount deductible as a bad business debt. He never reported the fee as income. The Treasury disallowed the deduction, and the Tax Court agrees.

The amount of a bad debt is its cost-basis. A fee not included in income has a cost-basis of zero. When it becomes worthless, there is no cost-basis to recover —so no amount is deductible. To hold otherwise would be wrong for another reason. It would place an unfair burden on accrual basis taxpayers. They have to account for receivables like fees whether or not paid, while

cash basis taxpayers need not account for a fee if it is not paid. The requirement, says the Court, is reasonable.

►*Fraternity contribution of medical equipment*◄

If a college fraternity has a special fund to which deductible contributions may be made, then contributions of supplies and equipment by doctors may be deductible. The amount deductible would be the fair market value of the items contributed at the time the contribution is made. Generally, a fraternity is not the type of tax-exempt organization to which tax deductible contributions can be made. Therefore, donations directly to a fraternity are not deductible. However, some fraternities have special funds to which deductible contributions can be made. If the doctor's fraternity has such a fund, and his donation is made to that fund, he can deduct the fair market value of the supplies or equipment he donates as a charitable contribution.

Contributions of technical equipment are on the increase. There are organizations acting as clearing houses for donated equipment. One foundation, the Surgical Trades Foundation, receives medical equipment and supplies from donors for distribution to missionary hospitals. A group called Operation Button Jar receives surplus laboratory equipment from donors for colleges and schools.

Here is a word of caution on money or property donations to a college. Do not indicate a particular student to be helped. When an individual is named or suggested as beneficiary of an otherwise deductible donation, the Treasury may disallow the deduction. Before the Tax Court is a petition to review the Treasury's disallowance of a contribution to a scholarship fund. The donor had suggested that the scholarship committee examine the qualifications of a particular student as a possible beneficiary of a scholarship award, if on examination he was found qualified. The student, who was not related to the donor, was selected as a scholarship winner. The Treasury disallowed the donor's contribution on the grounds that it benefited a named individual.

►*Tax treatment on conversion of matured insurance policies*◄

When a physician's endowment insurance policy matures, he can elect to take the proceeds in (1) a lump sum, (2) in an annuity, (3) an interest option or (4) a paid-up life insurance policy. Here are the tax consequences:

Lump sum. The tax is on the

difference between the cost (premiums paid less dividends) and the amount received. This difference may be spread over three years if the physician finds it results in less tax than the tax he has to pay on the difference in the year of payment. For example, he may have $6,000 income in 1961 from the maturity of the policy. He finds his tax this way:

1. He adds the $6,000 to his other income for 1961 and finds the tax on that amount.

2. He adds only $2,000 to his other 1961 income, and finds the tax on that total.

3. He adds $2,000 to his 1960 income and finds the tax at 1960 rates for that total. He subtracts the tax he has paid for 1960 from this total, and notes the amount.

4. He adds $2,000 to his 1959 income and follows the same procedure as in (3), using 1959 rates.

5. He adds together the tax found under (2) and the differences found under (3) and (4). He compares this total with the tax found under (1). His 1961 tax is the lower of the two amounts. Note: Ordinary income, and not capital gains rates apply.

An annuity. If he takes an annuity option before the policy matures or within 60 days after maturity, no tax is payable on the matured policy. Tax is payable only in the years during which income is received from the annuity. If the election to take an annuity is not exercised before the expiration of the 60-day period, the lump sum is treated as the cost investment of the annuity contract, and the tax treatment is as if a lump sum is received.

Interest option. If he elects to take an interest option before the policy matures, no tax is payable on the matured policy so long as the insured has no right to withdraw the proceeds. If the election is made after maturity, or the insured has the right to withdraw proceeds, tax is payable as on a lump sum. Interest is taxed in the years received.

Paid-up insurance. This is not a taxfree exchange. A tax is payable on the difference between the present value of the paid-up policy and the premiums paid for the endowment policy. In figuring the value of the insurance policy, it is not cash surrender value that is used, but what would have to be paid for a similar policy with the company at the date of the exchange. This figure can be obtained from the insurance company. The difference is taxed at ordinary income rates.

These exchanges are taxfree: (a) Life insurance policy for an-

other life insurance policy; an endowment policy; or an annuity contract. (b) An endowment policy for another endowment policy which provides for regular payments to begin at a date not later than the date on which payment would have started under the old policy; or for an annuity contract. (c) An annuity contract for another annuity contract.

These exchanges are not tax-free: (a) An endowment policy for a life insurance policy; or an endowment policy which provides for payments to begin at a date later than payments would have started under the old policy. (b) An annuity contract for a life insurance policy; or an endowment policy.

►*Tax advantages in timber investments*◄

Investing in timber is probably the only investment which can give an individual capital gain no matter how he disposes of his interest. He can get capital gain if he sells both standing timber and the land, or if he sells the standing timber and holds on to the land, or if he cuts and sells the timber or gives someone the right to do so for a royalty, payable per foot of timber.

With proper planning, a timber asset never diminishes. It replaces itself. When a portion of the tract is cut, it can be reseeded so that as the tract is cut, the reseeded portions become ready to cut. Taxes, insurance, and interest costs may be offset against fully taxed ordinary income rather than against the capital gain profit of the timber. If the investment becomes bad, losses can be offset against other income. Fire, lightning, and other casualty losses are fully deductible. Timber investment offers capital gain on profits and full deduction on losses.

►*Doctor's prescriptions for collapsible corporations*◄

A taxpayer has a "collapsible corporation" when he uses his corporation to construct property with a view of selling his stock interest or liquidating the corporation before it realizes a substantial income. Under such circumstances, the sale of stock or liquidation produces ordinary income rather than capital gain. But the Tax Court recently ruled that forced sales of stock under doctor's orders take taxpayers out of the class of those who go into the transaction with a "view" to sell or liquidate. So doctors' orders cured two cases of "collapsible corporation" ailment, helped the patients to avoid ordinary income and get capital gain on the sale of their stock.

Mr. A was an investor. He and Mr. B, an experienced real estate man, formed a corporation to erect an apartment house. After the house was constructed, Mr. B suffered a heart attack. He had a past history of heart condition and his doctor ordered him to cease business activities. Mr. A had neither the cash nor the experience necessary to carry the building on without Mr. B. As a result, they both sold their stock to outsiders. The Tax Court held that Mr. A realized capital gain on the sale, not income, because the sale was necessitated by a doctor's orders.

Mr. C had been active in the construction business for many years. With a desire to take things easier, he formed a corporation to erect an apartment building, intending to manage it. A year after the completion of the building, his doctor told him that his health required more physical activity than he got from the sedentary job of managing the building. He was advised to go back into the construction business. This left him too little time for building management. So he sold his interest in the apartment building corporation. The Court gave him, too, a capital gain on the sale, because the sale was necessitated by a doctor's orders that he increase his physical activities.

►*Progress on medical corporations*◄

Frustrated by the Kintner Regulations in their quest for tax benefits available to other employer-owners of corporations in retirement and estate planning, doctors, dentists and other professionals are now turning to their state legislatures for relief, and action. Most states permit professionals to practice only as individuals or partners. The Treasury Regulations make it clear that most partnerships will be unable to qualify as associations that are taxable as corporations, and so will be unable to get the advantages offered by qualified pension, profit-sharing and deferred compensation plans. Arkansas, Georgia, Minnesota, South Dakota, and Tennessee have already adopted new laws or amended existing laws permitting doctors to so organize as to qualify for corporate tax treatment. Similar action has been proposed in Alabama, California, Florida, Indiana, Iowa, Ohio, Oklahoma, Oregon, New York, and Wisconsin. And in Congress, the Self-Employed Individuals Tax Retirement Bill was approved by the House Ways and Means Committee. With more states taking action, and continued life of the Bill in Congress, it may be that by next year doctors and other profes-

sionals will get the tax break so long in coming to them.

►*Giving away insurance*◄

Not all property included in an estate for tax purposes is necessarily subject to estate tax. Two valuable deductions are available as offsets—the marital deduction and the charitable contribution deduction. The marital deduction allows a surviving spouse to take taxfree from estate tax up to one-half the decedent's adjusted gross income. This is the gross estate less funeral and administration expenses, debts and losses sustained while the estate is administered. The charitable contribution deduction to an estate is not limited to the 20-30% limitations imposed in income tax, although there are some states which limit the amount its residents can leave for charity when immediate relatives survive. The combined effect of these two deductions can result in a greater net-after-tax estate for the family.

Say a doctor's adjusted gross estate is $400,000, which includes a life insurance policy of $100,000 payable to his wife. The marital deduction, should the wife survive, will be $200,000. The taxable estate, after deducting the specific exemption of $60,000, is $140,000. The estate tax on this amount is $32,700. If, however, the doctor divests himself of ownership of this policy, by irrevocably assigning it to his wife, or to a trust for his wife, he may remove the proceeds from his estate, even though he continues to pay the premiums. By doing so a tax saving for his estate results. His adjusted gross estate would now be $300,000. The marital deduction would be $150,000. The taxable estate after deducting the specific exemption of $60,000 would be $90,000. The estate tax on this amount is $17,900. The saving for his family would be $14,800.

Caution: The insurance policy must be legally removed from the estate to effect this result. Insurance proceeds of an assigned policy may still be subject to estate tax if there is a possibility for the insured to get back the policy, and if this possibility is worth more than 5% of the value of the policy just before his death.

The gift tax considerations must also be weighed in the light of each individual's own situation. An assignment is a taxable gift. But the gift to a wife allows a gift tax marital deduction of one-half its value when assigned. Each individual has a $30,000 lifetime exemption and a $3,000 annual exclusion. If he has used little or none of his lifetime exemption, the gift tax

will be reduced or even eliminated. The annual premiums paid after assignment by the husband, are also gifts. But his annual $3,000 exclusion per person, again depending upon his other gifts, may minimize or eliminate the gift tax.

►*Life insurance and charity*◄

If a doctor makes a gift of his insurance policy to a charity, he has no gift tax problem. He has an income tax contribution deduction when he assigns the policy for the value of the policy, which is, at minimum, its cash surrender value; and an income tax contribution deduction each year he pays premiums. His estate has the benefit of a full charitable deduction.

Say a doctor's adjusted gross estate is $400,000 and he has, in addition, a life insurance policy of $200,000. He irrevocably assigns this policy to a charity, taking care that he does so with reservation to himself of such "incident of ownership" that the proceeds are included in his estate (although not taxable). The marital deduction is one-half of $600,000, or $300,000. The charitable deduction is $200,000, the amount of the policy. His net estate before the $60,000 exemption is $100,000. The Federal estate tax is $4,800. He so leaves for his family $395,200, and $200,000 for charity. Without such insurance, the marital deduction would be one-half of only $400,000, or $200,000. The net estate before the $60,000 exemption would be $200,000. The estate tax on this amount is $32,700. He would leave for his family $367,300—$28,900 less, and nothing to charity.

In order to give a wife the benefit of the larger marital deduction and to get the annual premium contribution deductions in income tax, the proceeds must be included in the estate. This can be effected by retaining the necessary "incident of ownership." The reservation of the right to change the form of the policy, or to determine the settlement option may be such incidents of ownership. In a recent case before the Tax Court, a decedent reserved for himself the right to borrow against the policy to pay the premiums. This, too, was held to be sufficient "incident of ownership" to cause the proceeds to be included in the estate for tax advantage.

►*Life insurance trusts*◄

A life insurance trust can give a wife the security the insured wants for her, for her lifetime, and at the same time avoid a second tax in her estate, to the advantage of the children or others who ultimately take it. It is

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1. Blaiberg, J.: J. Med. Soc. New Jersey, Aug. 1957.
2. Weissberg, G.: Clinical Medicine, Feb. 1958.

like a trust created by will. The insured provides that the proceeds of his life insurance policies should be payable to his trustee, to invest and pay the income to his wife for her life. He can provide that if, in the discretion of the trustee (not the wife) she requires part of the principal as well as income, then principal may be paid to her. Upon the wife's death, the principal remaining in the trust is to be paid out to the children—or others. Under a trust such as this, the proceeds remaining at the wife's death will not be taxed in her estate. But the wife must not have the right to withdraw the principal or dispose of it as part of her estate in order to get the tax treatment described. If she has such power, the trust will be included in her estate and a second tax imposed.

Even a third tax may be saved. For example, the insured might direct that income from the trust should be paid to his wife for her life and then to a daughter for her life. Upon her death, the principal should go to his grandchildren. With no power in the wife or daughter to withdraw or dispose of the principal, two estate tax situations are bypassed.

►*Value of estate in trust increases by $1 million after payment of $20 million in taxes*◄

The testamentary trust has many advantages in family planning. It can be used to avoid a second estate tax in family planning. For example, a testator leaves property in trust, the income to be paid to his daughter for her life with the principal to go to his grandson upon her death. On the daughter's death, the grandson gets the trust property without any dilution for estate tax on her estate. If the testator left the property to his daughter outright, it would be taxed in her estate on her death and the grandson would get less.

The use of a testamentary trust will not only preserve the amount going to the remainderman-beneficiaries, but may even increase it. When E. R. Johnson, the founder of the Victor Talking Machine Company (now part of RCA) died in 1945, he left a taxable estate of $33 million. Estate taxes were about $20 million, reducing the estate to about $13 million. Mr. Johnson's will set up five trusts. The trust for his widow was to continue for her life. She died in January, 1961. The final accounting of the trustees reveals that in the 16 years since Mr. Johnson's death, not only was good income secured for the beneficiaries of his testamentary trusts, but the dilution of the estate by the $20

million estate tax has been completely offset by capital appreciation. The estate today has $1 million more in assets than it had at the time of Mr. Johnson's death. Its assets today are $34 million.

Statistics released by the Service show many taxpayers are cutting family taxes through trusts. In 1958, more than 550,000 fiduciary tax returns were filed with total income reported exceeding $5 billion. Of these fiduciary returns, more than 70% were filed by trusts. A trust can couple flexible family planning with tax savings. It can be used primarily for income tax savings through income shifting, e.g., parent shifts income and tax to child while retaining interest in trust property through 10-year reversionary trust. Or current income tax savings can be coupled with future estate tax avoidance, e.g., irrevocable trust in which grantor retains no interest. It can be used primarily to cut estate tax while protecting surviving spouse, e.g., marital deduction trust. If you never considered use of trust in your family planning program, this might be a good time to examine its value.◀

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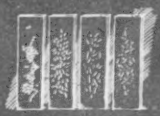

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►Tindal Tablets *(Schering)*

Each tablet contains 20 mg. of acetophenazine dimaleate. *Indications:* For symptomatic relief of anxiety, tension, hyperexcitement, irritability, nervousness, apprehension and associated insomnia. As adjunctive therapy in patients whose anxiety is associated with organic disorders. *Dosage:* To be individualized according to intensity of target symptoms, the condition being treated and patient response. *Supplied:* In bottles containing 100 or 1000 tablets.

►Avazyme Tablets *(Wampole)*

Crystalline chymotrypsin in enteric coated tablets, each with a proteolytic activity of 50,000 Wampole units (approximately 20 mg.) for oral anti-inflammatory therapy. *Indications:* To reduce inflammatory edema and the soft tissue swelling associated with bruises, contusions, fractures, hematomas, sprains and strains. *Dosage:* In severe cases, two tablets four times daily. In mild cases, one tablet four times daily. *Supplied:* In bottles containing 48 tablets.

►Delvex Tablets *(Lilly)*

Anthelmintic. Available in three strengths: Each tablet contains either 50 mg., 100 mg., *or* 200 mg. of dithiazanine iodide. *Indications:* In the treatment of clinically significant trichuriasis (whipworm infection), strongyloidiasis, and mixed infections in which either trichuriasis or strongyloidiasis is present. Not indicated in the therapy of enterobiasis. In ascariasis it may be used when other treatment has failed. *Dosage:* To be individualized. *Supplied:* Tablets 50 mg., in bottles containing 50. Tablets 100 mg. and 200 mg., in bottles containing 50 or 1000.

►Enarax 5 Tablets *(Roerig)*

New dosage form. Each tablet contains 5 mg. of oxyphencyclimine and 25 mg. of hydroxyzine hydrochloride. *Indications:* For the treatment of peptic ulcer and various gastrointestinal dysfunctions. *Dosage:* Average effective dose is one tablet twice daily, preferably in the morning and before retiring at night. *Supplied:* In bottles containing 60 tablets.

►Desitin Cor-D-Tar Cream
(Desitin)

Combines hydrocortisone alcohol 1%, diiodohydroxyquinoline 2%, and solution of coal tar (liquor carbonis detergens) 3% in a water-miscible base. *Indications:* For the management of persistent, subacute, or chronic inflammatory dermatoses, particularly when accompanied by scaling and lichenification with secondary bacterial or fungal infection. *Precautions:* As with other topical anti-inflammatory steroids, do not apply to tuberculosis of the skin. *Dosage:* Apply cream to the affected area one to three times daily as needed. *Supplied:* In tubes containing ½ ounce or 1 ounce.

►Monase 15 mg. Tablets
(Upjohn)

Each tablet contains 15 mg. of etryptamine acetate. *Indications:* For the management of depressive disorders and for the treatment of other medical and psychiatric conditions in which depressive overlay or basis is present and mood elevation and increased psychic energy are considered of potential benefit in the over-all management of the patient. *Dosage:* Usual starting dosage is 30 mg. daily given in divided doses. Initial benefit may be observed within two to three days, but maximum results may not be apparent until after two or more weeks of therapy. Adjustment of dose to individual response should be effected in increments or decrements of 15 mg. daily at weekly intervals. The daily maintenance dose ranges between 15 mg. and 45 mg. daily. *Supplied:* In bottles containing 100 tablets.

►Neosporin Aerosol
(Burroughs Wellcome)

Antibiotic aerosol for topical use only—not sterile. Each 90 Gm. aerosol contains 100,000 units of polymyxin B sulfate, 8,000 units of zinc bacitracin, and 100 mg. of neomycin sulfate (equivalent to 70 mg. of neomycin base) in inert propellant. *Indications:* To combat superficial bacterial infections of the skin due to susceptible organisms and those infections that occur in association with burns, skin grafts and donor sites, biopsy sites, lacerations, dermabrasion, vascular ulcers, decubitus ulcers, infected eczemas, infected dermatoses, cuts and abrasions. *Dosage:* Shake well before using and between sprays. Use one second intermittent sprays from a distance of about eight inches. *Supplied:* In aerosol spray containers of 90 Gm.

►Outline of Pathology

by John H. Manhold, Jr., D.M.D., F.A.C.D., Professor and Director of Oral Diagnosis and Pathology for the College of Dentistry, Seton Hall College of Medicine and Dentistry; and Theodore E. Bolden, D.D.S. Ph.D., Assistant Professor of Oral Diagnosis and Pathology, College of Dentistry, Seton Hall College of Medicine and Dentistry. W. B. Saunders Company, Philadelphia. 1960. $4.75

The authors were stimulated to the preparation of this book by discussions with medical and dental students, internes, residents and general practitioners, who were finding the standard pathology texts too verbose and repetitious. The authors have produced a book which will serve the purposes of the groups that had found the standard texts unsatisfactory. It is certainly desirable that all practitioners of the healing art keep conversant with advances in pathology; and it is too much to expect of any clinician that he read all on any subject as set forth in a standard textbook of pathology. This concise, up-to-date book will fill his need.

►A System of Medical Hypnosis

by Ainslie Mears, M.D., B. Agr.Sc., D.P.M., President, International Society for Clinical and Experimental Hypnosis. W. B. Saunders Company, Philadelphia and London. 1960.

The aim of the author is to describe medical hypnosis as he practices it, which method avoids the uncertainty which the textbook method is so likely to induce. The materials are woven into a system, each individual maneuver a part of the overall method. The motivation is given as a sense of uneasiness about some current writings on hypnosis. The author has published several other books on various aspects of the subject, as applied to the practice of psychiatry for example. There are sections on the nature of hypnosis, methods of induction, suggestive therapy, hypnoanalysis, hypnosis in general medicine, and a glossary is appended which should serve a useful purpose. The interested doctor will find a good setting forth of the claims and ideas of the considerable number of doctors of medicine who use this form of therapy.

►Respiration, Physiologic Principles and Their Clinical Applications

edited and translated from the German Edition by Peter C. Luchsinger, M.D., Assistant Professor of Medicine, Georgtown University School of Medicine, Washington; and Kenneth M. Moser, M.D., Instructor in Medicine, Georgetown University School of Medicine, Washington; with 95 illustrations. The C. V. Mosby Company, St. Louis. 1960. $15.75

For several years it has been apparent to the authors, editors and translators that the information contained in the German edition should be made available in the English language. These transatlantic scientific exchanges between Zurich and Washington, we are told, have involved close scrutiny of all material contained in this book, and as the editors feel, have led to a broad coverage of the combined experience of all those concerned in making this publication. Part 1 is devoted to normal physiology of respiration, part 2 to investigative methods in pulmonary function, part 3 to pathophysiology of respiration, and part 4 to pulmonary insufficiency in clinical practice. Of particular interest to clinicians are the chapters in part 4 on chronic cor pulmonale, specific pulmonary diseases, and influence of nonpulmonary factors upon pulmonary function. Among the individual subjects dealt with in the last chapter are disturbances in acid-base balance, influence of pharmacologic agents upon acid base balance and upon respiration, pulmonary function in general anesthesia, artificial respiration and oxygen therapy.

►Bedside Diagnosis

by Charles Seward, M.D., F.R.C.P. (Edin.), Physician, Royal Devon and Exeter Hospital; Consulting Physician, Princess Elizabeth Orthopoedic Hospital, West of England Eye Infirmary and the Ministry of Pensions; Honeyman Gillespie Lecturer; with a foreword by Lord Cohen of Birkenhead, M.D., D.Sc., LL.D., F.R.C.P., F.A.C.P., Professor of Medicine, University of Liverpool. Fifth edition. The Williams and Wilkins Company, Baltimore. 1960. $6.00

It may well be doubted if anywhere better instruction in making a diagnosis at the bedside can be found. It is well to remember that the word clinical is derived from the Greek *klinos*, meaning bed, and that properly speaking all clinical diagnosis and treatment is done on a patient in bed.